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# California State Journal of Medicine

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MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Vol. XV, No. 11

NOVEMBER, 1917

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# California State Journal of Medicine

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VOL. XV

NOVEMBER, 1917

Number 11

## PACIFISTS AND HYPHENATES NOT WANTED.

The present crisis is too serious to permit speech or action in anywise calculated to handicap the prosecution of the Great War. Before this one great objective all else must give way. It is lamentably poor patriotism to censure the President, whether the censure originate with Mr. Roosevelt, or with a pro-German American citizen. Mr. Wilson has deserved and in uniquely large degree has won, the confidence and respect of the American people. We are at war, and whatever personal opinion may have been heretofore, every person has now the one paramount duty of supporting the administration to the utmost of his ability.

Such patriotic support will mean subscribing to the Liberty Loan beyond our estimated ability. It will mean neither fostering nor tolerating disrespect for the Government. It will have a very definite influence in the prevention and immediate settlement of labor disputes. It will mean the following of the governmental policies appertaining to food supplies, wastage in public and private, industrial organization and all the other far-sighted plans which are being unfolded from Washington. It will mean increased appropriations in all communities for health conservation, which is the backbone of the nation, as is health in the army and navy the backbone of the military establishment.

At least while the war is upon us, we must of necessity have an autocratic government if it is to be powerful. We must all do some things we do not like. Individual freedom must be subor-

dated to national freedom. Organization and obedience to orders must be the watchwords. We must remind ourselves evermore that, if the issue of this war be not fought out to a finish in Europe, it will with absolute certainty seek us here in our homes.

As physicians we have a double responsibility. The one and greater, is the health of the Army and Navy. The other and nearly as great, is the health of the civilian population. Let not our loyalty be divided. Whether in civil or military service, let us learn the first lesson of the soldier, obedience.

## EXTENDING FIELD OF PREVENTIVE MEDICINE.

A review of the developing concept of preventive medicine shows an interesting trend from the original applications to the eruptive fevers and great epidemic maladies such as smallpox and plague. The history of this development would be a lengthy matter. It is however worth while in brief fashion to notice the present extension of the preventive field to new departments. Among these are the concerted lines of attack on specific diseases by improved methods of quarantine and destruction of infection. Also are to be included the vast extensions in industrial hygiene which have come about because they have been shown to pay commercially rather than because of their intrinsic public health value. Child hygiene and reduced infant mortality go hand in hand with better maternity results as inter-



preted in terms of decreased puerperal sepsis, post-confinement disabilities and maternal deaths.

Not the least important of the recent extensions of the field of preventive medicine is the rapidly increasing attention devoted to matters of social and personal hygiene, and also to the old problem of venereal prophylaxis. Better housing, better wages, better working and living conditions, better babies, better schools, better amusements, temperance in eating and drinking, sane and wholesome mental habits,—all of these are taking their rightful place in the scheme of preventive medicine as that term is coming to be understood. In short, all that makes for a happier, healthier and longer life for the average individual has a place in the scheme and a definite contribution to the cause of prevention of disease.

A noticeable feature recently in this connection has been the attention bestowed on old familiar disease dangers which, because of their familiarity had too often come to be considered, if considered at all, as necessary factors of every day life which were not to be attacked practically. An example was the attitude toward typhoid, tuberculosis and malaria. All of these were only a comparatively short time ago of wide distribution throughout the United States. The first two have received such efficient attention that already a distinct improvement is to be seen in their morbidity and mortality. The last has only now come into full recognition as a major public health problem of the United States from the standpoint of preventive medicine. And this is the more remarkable when it is recalled that the cause and means of conveyance have been understood for no short period.

In illustration of the late recognition of the public health importance of malaria, may be cited a contribution of J. W. Trask, assistant surgeon general of the U. S. Public Health Service.\* Trask relates the difficulty experienced by the Public Health Service in securing data of any value on the actual incidence of malaria even in those districts where it was known to be endemic and common. This, of course, is but another example of the imperfect reporting of vital statistics in the United States and the limited registration area. He found three general endemic areas, one large district comprising the southeastern section of the entire country, one in the central river valleys of California and the last in New England and New York State. In addition it is present to some degree in practically every State of the union. He goes on to show that it is one of the chief health and economic problems of the country. Such a report shows the rapid extension of the concept of preventive medicine to new diseases and conditions which have an intimate bearing on public health.

#### THE ALCOHOL QUESTION.

##### V. In Conclusion.

There has recently come to our attention a pamphlet entitled "Medical Science on the Side of Alcohol," which is devoted to the views of Dr.

Abraham Jacobi, as reported to have been recorded in the New York Times (date not given). The first page does not interest us, as it gives the description of Dr. Jacobi from "Who's Who in America." Following this, however, is much of pertinent interest, not because of the exact views expressed, because they are most inexact, but because of the new illustration afforded of an eminent reputation becoming a cloak for ignorance.

We pick but two from many possible points of criticism of this pamphlet. Dr. Jacobi's opinions on alcohol as published in 1880 are quoted as having a present-day value. A great argument is made of the fact that certain pharmacologists ascribe a food value to alcohol. As for the first, it can be dismissed as irrelevant. As for the second, the argument should be completed with the statement that the food value of alcohol is recognized and that the same authorities who recognize it, also recognize and emphasize its limitations as a food. In other words, alcohol is only oxidized in the body to a limited extent, and therefore its food value is extremely limited. Along with this very minor action, goes the toxic action which has been previously described.

To repeat, this dragging of Dr. Jacobi into such an argument and on such a side of it, serves to cast great discredit on Dr. Jacobi's reputation as a scientist and humanitarian, for both of which he is justly noted. Well-earned reputation in one line does not empower a man to speak with authority in another line. At present we are forced to accept the verdict of the facts in the case as observed by present-day observers under carefully controlled conditions. It is a trick of the losing side to seek authority for itself in the protection and support of those whose authority is recognized by all. That the weight of a widely known physician's opinion should be sought is natural but the result is the opposite of that intended. Medical science today in no uncertain terms stands opposed to the use of alcohol as a beverage. The quotation of Dr. Jacobi as favoring the use of alcohol, is a compliment to the reputation of Dr. Jacobi, but serves to show that Dr. Jacobi is not in touch with the trend of present investigation and social conscience.

We have briefly touched on the social, economic, physiologic and public health indictment against alcoholic beverages. We have noted the fact that alcohol can help win the great war, or can seriously hamper that all-important necessity. No question enters of the personal desires or safety of the individual user of alcohol. That is not a matter for debate. The question, stripped of camouflage, is whether the United States can fight better with or without alcohol, whether social conditions and living conditions will be improved or deteriorated by alcohol, whether public health will be advanced or harmed by alcohol, whether economic efficiency will be increased or diminished by alcohol. We must face this question, whether we will or no. We cannot point to England or France or Japan and apply their experi-

\* Am. Jour. Pub. Health, Dec., 1916.



ence to ourselves. No precedent is safe unless it is confirmed by our objective present findings.

If individual freedom demands that every man have his available alcohol, then why does it not equally demand that he also have his cocaine and morphine? All are drugs, with certain actions which are beneficial when properly directed and with other actions which work untold harm when allowed "freedom." The social conscience of our time will not allow personal freedom to be confounded with license and loss of self-control.

We believe that the evidence in the various lines cited is decidedly against the value or necessity of alcohol as a beverage. We will be glad to hear evidence, if there be any, to the contrary, but we will not tolerate camouflage and sophistry and cloaking of mercenary designs under misleading argument and ostensible moral purpose.

#### TYPICAL "NEGLIGENCE" CASES AND SOME REASONS FOR THE FORMATION OF THE INDEMNITY DEFENSE FUND.

We have on several occasions stated in these columns that many of our members are under the mistaken impression that claims for malpractice and actions for alleged negligence and carelessness are as a rule asserted and filed only against the younger members of the profession—those who might be regarded as less skilled or experienced, or against whom some imputation of recklessness might be made. Nothing could be further from the truth. We have also stated on a number of occasions in these columns, and we do not hesitate to say again, that ignorance or rapacity do not discriminate in the selection of their victims, and that the oldest, best qualified, and most experienced of our number are just as much the subject of attacks for alleged malpractice as any others.

To point these statements we will quote a few typical cases from our legal defense files (names and other identifying data being, of course, omitted).

Case 1: A physician of forty years' experience, a graduate and post-graduate of two or more leading colleges of medicine, is called to attend a patient suffering from a bone felon. He prescribes a recognized standard surgical dressing, finally lances the finger and gives proper and careful instruction as to cleansing, etc. He is then discharged by the patient, who does not think a doctor's services necessary any longer, and who thereafter undertakes the treatment of the finger himself. He permits infection to go on and the finger has to be amputated. The patient then sues the doctor for \$10,000.

Case 2: A patient, riding in an automobile which collides with a railroad train, sustains seventeen fractures of the arms, legs and ribs. He hovers between life and death for a month. The physician, fully experienced and qualified, by the use of special appliances, secures and maintains the correct apposition on all fractures, carries the patient beyond the effects of the shock, threatened

pneumonia, and even takes the precaution to have his treatment checked and approved from time to time by an able consultant. The patient discharges the physician at the end of seven weeks and files suit for \$25,000 for negligently delaying recovery.

With few exceptions the foregoing are fair samples of what our legal defense records disclose. Such claims are being asserted against our members on an average of about eight per month. Ridiculous as they may appear from the standpoint of medical science, they are nevertheless a menace to the individual involved, and require skilful and vigorous handling in his interests.

If you have not gone through an experience of this kind, why not accept the judgment of your representatives and officers and those who have met with such accusations, and fortify yourself and protect your family against possible adverse judgments? The Indemnity Defense Fund was formed to meet this situation.

#### THE ABSENT DOCTOR'S PRACTICE.

At the suggestion and request of Dr. J. Henry Barbat, President of the State Society, attention is called to a situation in the medical fraternity which should receive the earnest attention of every medical man in the State. An agreement has been entered by the majority of the profession to protect to a certain extent the incomes of their confreres who have gone to the front, first by giving to the doctor's family, or the doctor himself, one-third of the fees collected from his patients, and second, by returning the patient when the doctor returns from the war.

It is unfortunately the case that these provisions have not been complied with always in the manner reflecting honor on the profession. Many complaints have been received from men who are at present away from their own practice, stating that as yet they have received nothing or only a few dollars. While it cannot be expected that an individual will receive one-third of his previous income while he is away, he should be made to feel that his confreres at home are trying to make his lot easier by treating him honestly and fairly in the matter.

It is suggested that the county societies again take up this matter with their members and instruct them to keep a separate account of all patients of men who have gone to the military service, so that when the latter return, they may receive a full account of the work done for them by their friends at home.

In the case of San Francisco County Society, numerous requests have come asking to whom such money should be paid, and in many cases the absentees have left no authorized agent to receive it. Each doctor going to the military should leave proper instructions with his county secretary. And especially should each doctor attending patients of those in the military, be most punctilious in forwarding to the authorized agents the proper proportion of collected fees.

### STATUS OF HEALTH INSURANCE.

The war has so changed conditions as to render it practically impossible for us to look to England for the information which we so much needed before being able to draw a definite conclusion as to the good or bad results from health insurance. Conditions in other European countries where health insurance is enforced are so different from those in the United States as to render deductions from their statistics unsatisfactory. We do know that the system is not working one hundred per cent. perfect in England, and that very little change can take place in it until those most concerned have more time to give to its study there.

Here at home, the war has forcibly brought to our notice evidence of a large amount of unrecognized disease. Much of this has gone unrecognized because of the inability of individuals to pay for medical service, and because of their ignorance in regard to clinics. The medical examinations which were necessitated by the draft have done much toward exposing otherwise ignored disease. As a result the State has done what it could to induce accepted individuals to apply to the proper sources for treatment.

The question naturally presents itself, as to why did we have to wait for our entrance into war to do all these things, and whether, when we are through with war, we will be content to return to the old order of things. Will we not demand some improvement in public health measures, a better control of patients with contagious and communicable diseases, more preventive work, more hospitals, better clinical facilities for general practitioners, more diagnostic clinics, more laboratories, etc.

We are by no means certain that health insurance will solve all the above problems. The Social Insurance Committee of the State Society is devoting some time to these matters and will no doubt before long publish a preliminary report. The Committee, however, needs all the assistance it can have. It welcomes expressions and opinions from all sources. Please do your bit.

### CONCERNING CHRISTIAN SCIENCE.

In this issue, under the heading "Correspondence," appears certain matter which every doctor and every layman who is interested in public health, and in personal health matters, will find of important interest. These letters are self-explanatory and need no comment or addition. In connection with them we would call attention also to newspaper reports from Sacramento early in October, detailing the death of an eight-year-old boy from diphtheria while under treatment by Christian Science practitioners. According to these reports he was not allowed treatment by a licensed physician, quarantine rules were not observed, and the only treatment administered was by Christian Science practitioners.

If the facts are as detailed in the papers, this

case is apparently not amenable to prosecution under a strict interpretation of the Medical Practice Act of California. It raises the old question, which is constantly with us, as to whether Christian Science practitioners have a moral, or should have a legal right, to diagnose and treat disease in any form whatsoever, when as a result of such diagnosis and treatment a non-responsible individual may be subjected to danger of unnecessary suffering or death, and the contiguous public may be subjected to unnecessary danger of contagion.

A very candid and lucid answer to Mr. Ross's letter, referred to above, shows plainly the non-religious character of Christian Science therapeutics. Religious, or non-religious, we can see no logical reason for the two extreme dangers just noted—in the first place, to the non-responsible individual, and in the second place, to the contiguous public—from the practical workings of Christian Science therapeutics.

### THE RECENT ORAL EXAMINATION OF OSTEOPATHS.

As noted in the JOURNAL of last month, there was held in October an oral examination of osteopaths in Los Angeles, under the provisions of the Medical Practice Act allowing osteopaths to qualify for a physician's and surgeon's license, provided they met certain preliminary qualifications and passed a practical, clinical or oral examination. A request was made by the editor for a stenographic report of the examination questions asked. So far no reply has been received to this request, but we are informed that no stenographic record was made of said questions. A later request to the Board for details of this examination, in order that they might be included in this issue of the JOURNAL, has brought no reply at the date of going to press.

At this examination two osteopath members of the Board were examined and passed. As stated above, details of the examination are not at hand. These details will undoubtedly show that the examination was of a high character and fully sufficient to establish the professional proficiency of the candidates. An examination of such character, of course, would be particularly acceptable in the case of members of the State Board of Medical Examiners itself.

The medical profession of the State is of necessity extremely concerned with the conduct of these oral examinations. So far as the Board of Medical Examiners shows itself worthy of co-operation and support from the medical profession, just to that extent will co-operation and support be extended to it. We would suggest most earnestly that with the recent reorganization of the Board of Medical Examiners a high and consistent policy of oral examinations be established and maintained.

Details of this first examination will be published as soon as available.

## EDITORIAL COMMENT.

Little observation is required to show the enormous appetite of the American people for patent medicines. When in doubt take a drug, seems a common maxim. If you do not see a sufficiently advertised or gaudily wrapped package, ask the druggist and seldom will he fail to provide an attractive carton containing the very thing which is best for your ailment. Too often the physician must bear the onus of invariably prescribing drugs, solely because the patient demands drugs and will not be cured without them. Too often the advertising matter around the package has a greater curative influence than the contents. The old rhyme has no small portion of truth when it says,

"It will cure the dreaded consumption, and a thousand other ills,  
Smell of the cork or look at the wrapper, do you more good than Beecham's pills."

Yet here is the gist of the matter. In the face of this over-weening appetite for drugs and for patent medicines, why should not the food administration, or some other allied administration, advocate and enforce an economy in patent medicines and nostrums? Why not save the money that, in the form of nostrums and secret cure-alls, goes into that human garbage pail, the stomach? Why not have a campaign by the drug-store, educating the people to economize in this regard, just as they are being taught to do at the table? Why should the patent medicine vendors and manufacturers continue to reap their unholy profits in war-time, when every dollar is needed in the Liberty loan? Finally, why not a national campaign of real economy and health conservation, by doing without patent medicines and nostrums?

It is a source of pride for every physician in the State to read the following in the September bulletin of the State Board of Health. "California is the first State to face the venereal disease problem squarely, and to establish a bureau to handle it directly and vigorously." The tentative program was published in the last issue of the JOURNAL. No other single disease factor has been more important in the English and French armies than venereal disease. This alone makes it imperative that the American army be saved from such disaster. Also the retro-active effect on the civilian population, both during and following the war, is of no small importance. Uncompromising repression of prostitution is the best measure so far tested for prevention and gradual elimination of venereal disease. That such repression has not been an accomplished fact in any previous army is no argument against it, but rather a cogent reason for giving this method which has such rich promise, a thorough trial. There is no valid support of other methods to be drawn from experience of them in controlling venereal disease. But along with uncompromising repression, must go provision of adequate entertainment and recreation for soldiers and sailors. This provision is being

undertaken on a broad scale by the policy of co-operation with the Knights of Columbus, the Y. M. C. A. and other agencies. The State Board of Health should receive the heartiest congratulation and support from the medical profession in its splendid campaign, in conjunction with the military authorities, to decrease venereal disease in the army.

The JOURNAL receives a constant supply of anonymous literature dealing with all manner of affairs. Among the more recent accessions of the editorial waste-basket have been a great bulk of circulars, reprints and special articles opposing prohibition. Strangely enough, on none of this material is there any clue as to the source of its dissemination. Not that we care where it may originate! Not at all! It illustrates too perfectly the losing fight of various liquor interests. Only it would be surprisingly unique to have some of this gratuitous furnace feed signed and to know that its instigators were not really as afraid of publicity as they seem to be. The instigators and authors of anonymous literature of any sort have usually a cogent reason for keeping in the dark. In this case, the reason is not far to seek. Of all men, the medical profession, through its liberal education and humanizing activity, is least susceptible to anonymous contributions. The opponent who fears to fight in the open has indeed little hope of success.

Once again will the physicians of California please look upon the leading city newspapers of California and see how they reek with the advertisement of quack, specialist, secret remedy and sure-cure. Without advertising media, Quack Chamley of Los Angeles, who receives attention in another column, could not keep up his cruel deception. With a clean press, a large percentage of the shameless abortionists and mongers of fake remedies would be bankrupt. Too often is there a striking contrast between the editorial page of the newspaper and the advertising department. There is no valid reason from the standpoint of decent citizenship, a clean news press, and an educated public sentiment, why the newspapers of California should not set a high standard of advertisement as well as of news.

Particular attention is called to a letter, published under the "Correspondence" Department in this issue, to Dr. Louise B. Deal, of San Francisco, from Dr. Flora Murray, Doctor in Charge, Military Hospital, Endell St., W. C. 2, London, England.

The women physicians in the United States are entitled to exactly the same recognition for military service as are men doing the same work and assuming the same responsibilities. Moreover, women physicians ought to be represented in the military medical service wherever their professional services can be used. It is to be greatly hoped that in the near future methods will be worked out whereby this can be brought about.



## Original Articles

### THE VEGETATIVE NERVOUS SYSTEM IN RELATION TO GENERAL MEDICINE.\*

By FRANCIS M. POTTENGER, A. M., M. D., L. L. D.,  
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We are just beginning to realize, after many years of study in pathological anatomy, which has heretofore been considered the basis as well as the superstructure of modern medicine, that it fails to explain those conditions which are of most interest to the clinician.<sup>1</sup> Pathological anatomy may acquaint us with the changes in tissue which are produced by the disease process, likewise the changes which result from it; but the gap between these two has been left unbridged. It can be bridged successfully only by an understanding of biochemistry and pathological physiology.

After many years of close study, we are confronted with many facts which we are unable to explain; largely because our field of investigation has been too narrow. The agencies through which the disease process produces its effects throughout the body, have not been sufficiently investigated. In order to understand this phase of medicine, we must realize the manner in which the workings of the human body are controlled. The various controls may be classified under sensori-motor; physiochemical; and psychical. Disturbance in any of these controls alters function and produces functional pathology or a pathological disturbance in the normal physiology.

It is to a better understanding of these various controls of the body that medicine will address itself in the immediate future. They have been omitted heretofore because of their general abstruseness. Our knowledge has been so slight that we felt our inability to understand them; but now that we have advanced in our study of normal physiology; and now that we better understand the pathology underlying disease processes and the effects of the disease processes in body tissues other than those in which the main lesion is located, we are able to trace the relationship between the two in a way that we were unable to do heretofore. The field is not so difficult as would seem at first thought. Many independent observations have been made and many fundamental truths have been already discovered, which, when put together, will greatly elucidate the subject. It will be necessary, however, for medical men to address themselves to this phase of medicine with the same earnestness and the same eagerness for truth, as they have addressed themselves in the past to the problems of physiology, pathological anatomy and general laboratory study.

The pleasure in the study of disease comes from our ability to explain the phenomena observed; and not until we are able to think in terms of

visceral neurology, biochemistry and psychical change, shall we be able to explain the facts which present themselves in our every day practice.

At the outset of one's study in this field, it is necessary for him to understand that there will be incomplete answers to many of his questions. Many seemingly contradictory facts will be met. He must not waive aside the whole matter on this account for there are innumerable primary principles which are thoroughly established; and the number of these will increase with increased familiarity with the subject.

Our symposium this afternoon will deal with pathological physiology. We hope to bring before you—not the symptoms and the signs of the disease alone—but we hope to offer a basis for their explanation. A symptom is a disturbance in normal physiological function. As long as function proceeds in its normal way, no symptoms are presented; but when the normal course is altered, then they arise. In medicine we have made the ridiculous mistake in the past of trying to ignore functional disease; we have tried to brush it aside and consider nothing but organic change; but now we have learned that organic change expresses itself in functional derangement, and it is functional derangement that gives the patient most concern and demands study and relief at the hands of the physician. We shall endeavor by the papers here presented to take up two phases of normal physiological control; that of the vegetative nervous system and the endocrine glands. It can be seen then that the foundation for this symposium is normal physiology or an inquiry into the manner in which nature carries on the intricate activities of the body.

In opening the symposium, I shall confine my discussion to the vegetative nervous system. It must be remembered at the outset that there can be no serious change in the equilibrium of the vegetative nervous system without causing disturbances in internal secretions; neither can there be any serious change in internal secretions without disturbing the equilibrium of the vegetative system.

#### THE VEGETATIVE OR INVOLUNTARY NERVOUS SYSTEM.

In order to make my meaning clear, I shall define the terms used in this discussion before proceeding. In speaking of the vegetative nervous system, I mean the same system as is spoken of by various writers as involuntary and autonomic. (The autonomic is also applied by some writers to the *greater vagus* division of the vegetative system.) It is that system which acts without an act of the will. It presides over those body functions which are necessary to life; and which would be endangered were they left to voluntary control.

The vegetative system supplies nerve fibers to the pilo motor muscles and sweat glands; to the gastrointestinal tract and all glands connected with digestion; to the heart and blood vessels; the respiratory mucous membranes and musculature; the genito-urinary system and all of the secretory glands and all smooth muscles of the body.

The vegetative system consists of two divisions

\* Read before the Medical Society of the State of California, San Diego, Cal., April 19, 1917.

1. Pottenger. The Importance of the Study of Pathological Physiology in Internal Medicine; Illustrated by the Analysis of the Symptomatology of Tuberculosis. (Read before the Forty-second Annual Meeting of the Mississippi Valley Medical Association held at Indianapolis, Ind., October, 1916.)

which are physiologically antagonistic. The *sympathetic* system, which takes its origin from the thoracic and upper lumbar segments of the cord; and the *greater vagus*, the fibers of which arise from the mid brain, bulb and sacral portion of the cord. The fibers of the *greater vagus* run in the third, seventh, ninth and tenth cranial nerves, and in the pelvic nerve. This division of the vegetative system is sometimes spoken of as the autonomic, but should not be because of the confusion which it fosters, on account of the vegetative system as a whole being called autonomic.

The vagus is the greatest nerve of this system. The vegetative fibers in the third, seventh and ninth cranial nerves, likewise those in the pelvic nerve, have practically the same action as the tenth cranial, usually called the vagus nerve; consequently, I prefer to speak of them collectively<sup>2</sup> (following Eppinger and Hess), as the extended or greater vagus; and by so doing we arrange the fibers of the vegetative system in two divisions in which all of the fibers belonging to each division have similar action, and so that the two divisions as a whole antagonize each other.

In order to make clear the importance of so dividing the vegetative system, it must be understood that wherever the *sympathetic* and the *greater vagus* fibers meet in an organ, their action is antagonistic. It must further be understood that this antagonism preserves equilibrium and is accountable for the normal physiological action of the organ. If the fibers in one system are overstimulated, then a disturbance in physiological action results and symptoms appear.

It must not be thought, however, that every extra stimulus of one division is going to overcome the action of the other division and destroy the normal equilibrium. The normal equilibrium is not so easily upset. An *adequate stimulus* is necessary. An *adequate stimulus* is one which will overcome the action of the opposing nerve. It may be slight in one case and severe in another. The more stable the nerve equilibrium, the greater the stimulus must be before it becomes adequate. Herein lies the explanation of the oft noted fact that one patient shows symptoms easier; or shows more marked symptoms than another patient under apparently the same conditions.

#### THE ACTION OF THE SYMPATHETIC AND GREATER VAGUS IN THE IMPORTANT VISCERA.

In order to understand more fully the action of these two systems, it might be well to take up the important organs and show the tendency which will result from overstimulation of each of the divisions of the vegetative system. In the eye, we have the fibers of the *greater vagus* running through the third nerve, stimulation of which produces a contraction of the pupil and ciliary body (accommodation spasm), and a widening of the palpebral fissure. Stimulation of the *sympathetics* on the other hand dilates the pupil and causes contraction of Mueller's muscle, throwing

the eyeball forward. Thus we can see that a disturbance in the equilibrium in the vegetative system in the eye, influences accommodation; and this shows us why it is extremely difficult to fit glasses to patients whose nerve equilibrium is disturbed (neurasthenics). It also explains the disturbance in accommodation during toxemia, because toxemia acts upon the *sympathetic* system, and disturbs the normal equilibrium. It can be seen also how the eye symptoms are produced in exophthalmic goitre. Stimulation of the vagus increases the secretion of tears; while stimulation of the *sympathetic*, decreases it.

In the gastrointestinal tract, vagus stimulation increases appetite, increases gastric secretion, including hydrochloric acid; increases the secretion of the mucous glands of the gastro-intestinal tract and the secretion of the liver and pancreas. *Sympathetic* stimulation decreases appetite, decreases the gastric secretions, including hydrochloric acid; decreases the secretions from the mucous glands of the intestinal tract, liver and pancreas. Vagus stimulation increases motility of the stomach and intestines. *Sympathetic* stimulation decreases motility of the stomach and intestines.

Thus we can understand the dry furred tongue, decreased digestive capacity and constipation which accompany toxemia, particularly that of the acute type such as is found in the acute infectious diseases. This is an indication of marked sympathetic stimulation. Hyperacidity, hypermotility (either gastric or intestinal), pylorospasm, and spastic colon, are all indications that the equilibrium of the vegetative nervous system has been upset and that the vagus has been the division which has been overstimulated.

In the respiratory system, *vagus* stimulation increases the irritability of the mucous membrane of the nose and throat; increases the secretion of mucus in both the nose and throat; also, produces bronchial spasm and increases bronchial secretion. *Sympathetic* stimulation decreases the secretion and irritability of the nose and throat, and decreases the bronchial secretion and relaxes bronchial spasm. Hay fever and asthma then, are both expressions of increased vagus stimulation. Both may be ameliorated or relieved by the administration of atropin, which is a direct pharmacological antagonist of the vagus, or by adrenalin which stimulates the sympathetic nerves and causes them to oppose the vagus.

In the circulatory system, conditions are different from what they are in the respiratory and digestive systems. In the respiratory and digestive systems, the *greater vagus* is the system which produces increased muscular activity, while the *sympathetic* causes muscular relaxation. In the circulatory system, however, the opposite is true: Stimulation of the *sympathetic* produces vasoconstriction, increases the rapidity of heart action, and raises blood pressure; while the *vagus* system slows the heart's action, causes reduction of blood pressure, and in some instances apparently opposes vasoconstriction, although other factors come in here which make this phase of the subject extremely difficult to understand.

2. Eppinger and Hess, *Vagotonia*. (English Trans.) Nervous and Mental Disease Pub. Co., New York. 1915.

Nearly all secreting organs (suprarenals and thyroid are exceptions) have their secretory power increased by vagus stimulation, and it seems that each organ produces metabolites during its action, which act upon the arterioles and produce vasodilatation. In this way we account for the fact that each organ during activity shows a dilatation of its blood-vessels, which affords the opportunity for the increased supply of blood necessary for the extra work thrown upon it.

The innervation of the sweat-glands is as yet difficult to understand. Sweating seems to be a part of both increased sympathetic and increased vagus stimulation. Pilomotor muscles are supplied by the sympathetic system.

#### SYMPATHETIC AND GREATER VAGUS SYNDROMES.

From our discussion thus far, it will be recognized that when the tonus in either the sympathetic or *greater vagus* systems is increased, we should have more or less definite pictures. These might be spoken of as the syndrome of increased sympathetic tonus and the syndrome of increased vagus tonus.

In order to appreciate the result of excessive stimulation in either of these divisions of the vegetative system, it is necessary to fix definitely in our minds these two syndromes.

Our study of the vegetative system has been facilitated by the fact that there are certain pharmacological remedies and certain internal secretions which act largely or wholly upon one or the other division. For example: Adrenin acts upon the sympathetic system; and when injected into the body, produces the same symptoms as though the sympathetic system itself were stimulated. Pylocarpin, on the other hand, produces for the most part the same group of symptoms as is caused by increased vagus stimulation. Atropin has proven to be antagonistic to the *greater vagus* although its effect is not so strong in some divisions as in others. Its action is particularly weak on the sacral branches. Ergotoxin is also used at times as a paralyzant of the sympathetic fibers.

*Sympathetic Syndrome.*—From the use of these remedies we have learned that the syndrome of predominant *sympathetic* stimulation results in some of the following symptoms: Dilatation of the pupil; pushing forward of the eyeball; decreased lacrimal secretion; decreased salivary secretion; decreased secretion of the gastric and intestinal glands, including the liver and pancreas; decrease in the secretion of the mucous membrane of the air passages, both upper and lower; relaxation of the muscles of the air passages; increased tonus of the ileocecal valve; increased rapidity of the heart's action; lengthening of the rest pause in the heart; vasoconstriction; increase of blood pressure; increase of the amount of glycogen in the blood stream; contraction of the pilomotor muscles; contraction of the muscles of the sweat glands; and an increase in the leucocytes, particularly the neutrophils.<sup>3 4</sup>

3. Pottenger. The Syndrome of Toxemia: An Expression of General Nervous Discharge Through the Sympathetic System. (Journal of American Medical Association, January 8, 1916.)

4. Ibid. Clinical Tuberculosis. (C. V. Mosby Co., St. Louis, 1917.)

*Greater Vagus Syndrome.*—On the other hand, the syndrome of predominant vagus stimulation consists of contraction of the pupil; contraction of the ciliary body, shortening of the focal point of the eye; increased lachrymation; increased salivary secretion; increased secretion of the glands of the gastric and intestinal tracts, including those of the liver and pancreas; increased motility of the stomach and intestines, the former leading to nausea and vomiting, the latter to spastic constipation or diarrhea, according to the degree of stimulation or according to whether the circular or longitudinal fibers are particularly irritated; spasm of the pylorus; spasm of the anal sphincter; increased irritability of the mucous membranes of the upper and lower air passages, causing sneezing and at times laryngeal spasm or bronchial spasm; increased secretion in the upper and lower air passages; slowing of the heart beat; lowering of blood pressure; decreased coagulability of the blood; vasodilatation in certain areas; a general tendency to perspiration; eosinophilia and lymphocytosis.

In these two syndromes, one will find a large number of the symptoms met with on the part of the internal viscera. Their variability depends upon the normal tonus of the *sympathetic* and *greater vagus* in each individual; also upon the fact that a person may show an increased tonus in one part of the *sympathetic* or *greater vagus* division and not in all.

#### CLASSIFICATION OF SOME OF THE COMMON SYMPTOMS INDICATIVE OF FUNCTIONAL DERANGEMENT.

Analysis of the above syndromes shows that in the respiratory tract, the digestive with the exception of the ileocecal valve and the internal anal sphincter; and the genito-urinary tract, increased sympathetic stimulation produces a hypofunction, both in muscular and secretory structures. In the circulatory system, on the other hand, increased sympathetic stimulation produces a hyperfunction, giving an increased rapidity of heart beats and a general vasoconstriction, with resultant increase in blood pressure.

Increased stimulation of the *greater vagus*, on the other hand, produces a hyperfunction in the respiratory, gastro-intestinal and genito-urinary systems, increasing secretion and motility. In the circulatory system, on the other hand, it slows the heart beat, lengthens diastole and weakens the ventricular contractions; and in certain locations at least, produces vasodilatation.

If we take up some of the common symptoms and syndromes met in every day practice, we shall find that they may be analyzed according to their relationship to these two divisions of the vegetative system.

*Hay Fever.*—Hay fever shows as an increased lachrymation; increased irritability of the nasal mucous membrane, resulting in sneezing; increased secretion of the nasal mucous membrane; and sometimes both increased secretion of the bronchial mucous membrane, and bronchial spasm. Thus it can be seen that this is a definite picture of increased irritation of the respiratory and ocular branches of the *greater vagus*.



**Asthma.**—Asthma is a condition which is accompanied by bronchial spasm and increased bronchial secretion; sometimes an increase of secretion in the upper air passages; and a tendency to cough; and often eosinophilia. This is also indicative of increased vagus stimulation. It often occurs in patients who have other symptoms of increased vagus tonus; and may be accompanied by them, such as hyperacidity and spastic constipation. The heart beat, which would naturally be slow if it showed the same increased vagus irritation, is increased in its rapidity by the dyspnea present.<sup>5</sup>

**Hyperchlorhydria.**—There are many functional disturbances on the part of the gastro-intestinal tract that can be separated according to their action upon the sympathetic and *greater vagus*. Hyperacidity must be looked upon as a functional derangement. It may result from an organic disease of the stomach itself or from any irritation which expresses itself in increased tonus of the gastric branches of the vagus. It is extremely common as a symptom of gall bladder disease and of appendicitis. It likewise comes in tuberculosis as a result of the inflammation of the lung tissue; and can be found as a result of inflammation in many of the other important internal viscera. Hyperacidity is usually accompanied by either an increased tone of the stomach wall or increased motility. It is very likely to be accompanied by some degree of increased tone in the pylorus which at times may result in definite spasm.

**Hypochlorhydria.**—Hypochlorhydria is commonly found in patients suffering from acute infectious diseases or chronic infectious diseases, during stages of acute exacerbations. The depression of gastric secretion, including hydrochloric acid, is due to the toxemia acting through the sympathetic nervous system. This accounts for the long recognized fact that hydrochloric acid is indicated in therapy in convalescence from acute infections.

**Nausea and Vomiting.**—Nausea and vomiting are also symptoms due to increased vagus tonus. A patient suffering from hyperchlorhydria often shows slight nausea and sometimes shows vomiting as well. These symptoms are common whenever any portion of the gastro-intestinal tract is inflamed. They frequently accompany inflammation of the gall bladder or appendix, or inflammation further down the bowel. They are also frequently present in pulmonary tuberculosis, the irritation coming from the lung and reflexly influencing the gastric muscle.

**Intestinal Stasis.**—The subject of lessened motility in the intestinal canal has received much attention during recent years, but it has been attacked too much from the standpoint of being a disease entity of itself, which it is not, except in rare cases of mechanical obstruction.

Intestinal stasis may be due to either stimulation of the sympathetics or vagus, but more often the latter. The motility of the ileocecal valve is con-

trolled by the sympathetic nervous system. Where we have marked stimulation of the sympathetic system, as occurs in acute toxemia and in the presence of acute infectious diseases, it would be natural that there should be some interference with the ileocecal valve, retarding the emptying time of the ileum. Such conditions are also accompanied by a relaxation of the gastric and intestinal musculature and a lessening of the secretion of the gastric and intestinal mucous membranes, which would also have an influence in retarding the onward movement of the intestinal contents. The motility of the colon being also decreased by the same stimulation, the stasis of the intestinal contents is continued on throughout the entire bowel.

Ileostasis due to vagus stimulation is of another type. Moderate vagus stimulation has a tendency to increase the tone of the muscles of the intestinal tract and if it exerts itself particularly upon the circular muscle fibers, we have a constriction which interferes with the movement of the intestinal contents, leading to the very common condition of spastic constipation.

Spastic constipation is nearly always accompanied by some degree of hyperchlorhydria. The reverse is also true. If the longitudinal fibers are overstimulated, diarrhea results.

**Bradycardia.**—Bradycardia is a symptom of increased vagus tonus. It has been noted in inflammation of the gall bladder, sometimes as a symptom of appendicitis, and also in inflammation of the stomach and intestine. We note it commonly also as a result of inflammation of pulmonary tissue. It can result wherever marked irritation of the vagus takes place, providing it expresses itself reflexly in the cardiac branch of that system.

**Disturbance in Auriculo-ventricular Conduction.**—Very often we find as a result of vagus stimulation, a disturbance in conduction of the impulse, so that the auricular contraction is not properly conducted to the ventricle. This forms a partial heart block. This is the type of irregularity that is produced by digitalis. It can be overcome by lessening the vagus irritation by the administration of atropin, or by overcoming it by stimulating the sympathetics with adrenalin.

**Tachycardia.**—Tachycardia is sometimes a symptom of direct sympathetic stimulation. This is the type that we find in the presence of acute toxemia; also that which is produced by the administration of adrenalin and by such depressive emotions as worry, fear, discontent and discouragement.

**Toxemia.**—Toxemia in its general expression is a widespread stimulation of the sympathetic nervous system, in which the system seems to be stimulated in its entirety. There is a general inhibition of action on the part of the gastro-intestinal, respiratory and genito-urinary systems; increased stimulation in the circulatory system producing rapid heart action and vasoconstriction, which interferes with heat dissipation, causing rise in temperature; and increased motility in the subdermal musculature (goose flesh).

**Depressive Emotions.**—There is a group of

5. Ibid. Asthma: Considered in Its Relationship to the Vegetative Nervous System. (Read before Thirty-fourth Annual Meeting of the American Climatological and Clinical Association held at Lakewood, N. J., May, 1917.)

symptoms which is generally recognized as following such emotional states as pain, fear, anger, disappointment, discontent and worry. These recently have been made the subject of careful physiological study by Cannon<sup>6</sup> and others, with the result that they are found to belong physiologically to the group which express themselves through general *sympathetic* stimulation.

In all conditions in which there is central sympathetic stimulation, there is a stimulation of the adrenal gland. The adrenin, which results from the stimulation, acts upon all structures supplied by the sympathetics, producing and prolonging the same effect.

#### REASON FOR VARIABILITY OF SYMPTOMS ON THE PART OF INTERNAL VISCERA.

One thing that we cannot fail to notice in our study of these various functional disturbances, is that the group of symptoms which is produced by stimulating certain branches of the vegetative system, are not always all present under what seem to be the same conditions. This may be due to a difference in the individual. One person has a vagus system that is more irritable than another; likewise, one has a sympathetic system which is more irritable than another. Where infection involving an important viscus is present, we now understand that expected symptoms may not appear because we have stimulation of both divisions of the vegetative at the same time. The toxemia stimulates the sympathetics, while the inflammatory process itself has a tendency to produce reflex action in other structures through the vagus. The severity of the symptoms in a given case, as well as the individual symptoms which appear, are determined by the relative strength of the stimulation through the sympathetics and the vagus. Thus, one patient with gall bladder disease will suffer severely from nausea and vomiting, while another will not; one will have marked hyperchlorhydria, and another will notice no increased acidity. The same is true of appendicitis. In our tuberculous cases we see many instances of slow heart due to the reflex stimulation from the inflammation in the lung acting upon the cardiac branch of the vagus. We often see this most marked during periods of acute inflammation in the lung when marked toxemia is present, stimulating the sympathetics and tending to produce a rapid heart. On the other hand, in other cases we see the heart assume about its normal ratio to the temperature curve, the reflex irritation of the vagus showing no signs of action.<sup>4 7</sup>

With this brief analysis, I hope that I have been able to impress upon you—not only the importance of the study of visceral neurology, but also to point out some practical points which will aid in the better understanding of many of our common symptoms.

#### REPORT OF FORTY-FOUR APPENDICITIS OPERATIONS IN CHILDREN UNDER FOURTEEN YEARS OF AGE.\*

By EMMA K. WILLITS, M. D., F. A. C. S., and MALVINE I. JUDELL, M. D., San Francisco.

From a review of these cases we wish to accentuate the following points:

1. Delayed operation led to abscess in the great majority of cases.
2. Cathartics were given in nearly all the cases—to their detriment.
3. Our patients have made more rapid recoveries since we have removed the appendix in abscess cases.
4. The low mortality in our cases leads us to believe that the peritoneum of the child is more resistant to infection than that of the adult.

Considering the cases of delayed operation, we found, although there is practically a unanimity of opinion that appendicitis in children is a surgical condition, nevertheless we received our cases too late. In 44 cases we had 24 abscesses, six cases in which the abdomen was filled with pus, and only 14 catarrhal appendices. Looking over the symptoms we feel, in a great majority of the 30 patients, that the diagnosis was possible before the case came to operation. In some cases, medical advice was sought late; in others, the physicians waited for classical symptoms to develop. The days of suffering and the possible future complications, to say nothing of the possible fatal issue, may be avoided in many cases by early operations.

In comparing our statistics with those of Deaver, Fowler, Sprengel, Peple, Stiven and Comby, we find the abscess cases predominating.

According to the histories of our cases, rupture of appendices occurred as follows:

|     |  |
|-----|--|
| 15% | when operated upon at the end of the 1st day |
| 10% | " " " " " " 2nd                              |
| 25% | " " " " " " 3rd                              |
| 15% | " " " " " " 4th                              |

That is, 65% exploded appendices in the first four days of illness. The other 35% were operated upon up to the end of the second week.

There is no doubt that these appendices for the most part ruptured in the first 48 hours, for the cases operated upon in the early stage showed small perforations, limited pus formation, and good general condition.

How is the early abscess formation in the child to be accounted for? By the undevelopment of the child.

1. The appendix is located higher up in the abdomen, favoring general peritonitis according to surgical experience.
2. The opening into the cecum is proportionately larger than in the adult, thus permitting the entrance of feces and infectious material from the bowel.
3. Lymphoid tissue being more abundant, it is

6. Cannon. Bodily Changes in Pain, Hunger, Fear and Rage. (Appleton, 1915.)

7. Pottenger. The Relationship of Pulmonary Tuberculosis to the Vegetative Nervous System. (Read before American Medical Association Annual Meeting, held at New York, May, 1917.)

\* From the Surgical Service of the Children's Hospital  
\* Read before the San Francisco County Medical Society, March 21, 1916.

more susceptible to infection as a sequel to enteritis, tonsillitis, and the exanthemata.

4. Furthermore, the appendix is longer and the mesoappendix is shorter than in the adult. This facilitates kinking and interference with circulation, and the short omentum prevents it forming a protective wall.

In our forty-four cases the symptoms varied from slight to very great. We found them especially deceptive because they did not supply an index of the seriousness of the pathological condition, and thus slight pain and slight tenderness were overlooked until too late. The symptoms were: Pain, vomiting, rigidity, and frequent cessation of all symptoms. Pain was at first general, and as a rule localized later. Pain preceded the vomiting. Vomiting was not always present, and often after cessation of vomiting, one was falsely led to believe that the child was improving. Distension and rigidity were generally present but the abdomen remained compressible. Only in severe pus peritoneums was it very rigid.

Rigidity was found at times in the upper right rectus region; more frequently in the lower right rectus region; again in the lumbar region; and only twice in the left lower rectus region. We conclude that localized rigidity anywhere in a child's abdomen is most likely to be appendicitis.

One case will illustrate the slight typical symptoms found on examination:

After an onset of pain and vomiting for one and a half days, followed in some hours by sharp paroxysmal pains, the patient showed no further subjective signs. Examination showed leucocytes 21,000; temperature 99.4; pulse 90; rigidity in the lumbar region. Operation disclosed a perforated appendix.

In Case 29 we found rigidity so slight that rectal examination, showing a right pelvic resistance, was the determining factor in operation.

Case 19 showed obscure symptoms of pneumonia. The increased respiration delayed operation six hours, but the increasing appendix symptoms made operation necessary. An acutely inflamed appendix was removed, and a few days later a typical pneumonia temperature was followed by crisis.

In the second pneumonia case, No. 35, the diagnosis of a double pneumonia probably prevented the early recognition of a perforated appendix.

The pulse and temperature were of very little assistance; even the blood count was only a help and never a determining factor.

Practically all cases received cathartics following the pain and vomiting. Such treatment is harmful. It hastens the emptying of the small intestine, the cecum becomes distended and in its contractions to empty itself the appendix joins, and what might through rest have remained a simple local process, becomes a complicated one.

*Removal of appendix in abscess.* A few years ago we were content to drain the abscess. This meant protracted drainage and often secondary operation. It is now our technic to remove all appendices, no matter how extensive the inflamma-

tion, using great care to disturb the lymph walls as little as possible, and being content to tie off the appendix only when it cannot be drawn up into the wound for classical removal.

If there is one lesson to be drawn from the study of our forty-four cases, it is that delayed operation is dangerous in appendicitis in a child. In the words of Pfaunder, the problem is not: When do we operate? but when do we *not* operate?

#### FORTY-FOUR CASES OF APPENDICITIS IN CHILDREN.

|  |         |         |    |
|--|---------|---------|----|
| Number of cases.....                           | 44      |         |    |
| Deaths .....                                   | 1       |         |    |
| Mortality : .....                              | 2 3/10% |         |    |
| Males  | 19      | Females | 25 |
| Ages 2½ years to 14 years                      |         |         |    |
| Between 2½ and 5 years.....                    | 8       |         |    |
| Between 5 and 10 years.....                    | 21      |         |    |
| Between 10 and 14 years.....                   | 15      |         |    |
| Local Abscess .....                            | 24      |         |    |
| General Peritonitis .....                      | 6       |         |    |
| Catarrhal Appendix .....                       | 14      |         |    |
| Previous attacks in 20 cases.                  |         |         |    |
| Complications:                                 |         |         |    |
| Secondary operations for obstruction..         | 2       |         |    |
| Secondary operations for better drainage ..... | 2       |         |    |
| Condition of appendix:                         |         |         |    |
| Filled with Oxyuris vermicularis....           | 1       |         |    |
| Acute inflammation .....                       | 10      |         |    |
| Chronic, with adhesions.....                   | 3       |         |    |
| Perforated .....                               | 20      |         |    |
| Gangrenous .....                               | 10      |         |    |

#### INTRA NASAL COSMETIC SURGERY, WITH SPECIAL REFERENCE TO RIB WITH CARTILAGE, AND CARTILAGE TRANSPLANTS.\*

By GRANT SELFRIDGE, M. D., San Francisco.

*Intra Nasal Cosmetic Surgery*, especially the transplantation of cartilage and portions of rib with its cartilage in saddle nose, partial or complete and in notched deformities of the nose and in collapse of the alae has been a subject of great interest to me since I had the opportunity of seeing the work of Doctor Wesley Carter of New York City, five years ago. Through the courtesy of Dr. Frank Ainsworth, chief of the Southern Pacific Hospital, I have been able during my services at that hospital to work out the technic in the various deformities in which the transplant of bone and cartilage is indicated.

Many excellent articles have been contributed by specialists in recent years on the subject of nasal plastics, and it is therefore with some feeling of trepidation, especially since I have read the paper of our Dr. Eloesser, published in 1911, that I venture very briefly to present the subject with the accompanying slides. I do so, however, with

\* Read before the Surgical Section of the San Francisco County Medical Society, May, 1917.



the hope that your interest may be stimulated and your efforts to relieve external as well as internal deformities may be rewarded to your own glory as well as to the vanity and well being of many unfortunates.

When I first spoke to the chairman of this section about presenting the subject of plastic surgery, I felt that the discussion should clear up if possible some of the conflicting views held by different writers as to the advisability of removing the periosteum and medullary substance in bone grafts and the perichondrium in cartilage grafts, also whether it was a better procedure to attempt to introduce one end of the graft underneath the periosteum at the naso-frontal junction or underneath the periosteum covering the entire length of nasal bones. However, since that time the study of the x-ray plates taken at the time of the grafts, and subsequently, show clearly that the bone is being absorbed and is probably being replaced by fibrous tissue, and that it therefore makes very little difference where the graft is placed. Such a conclusion is based on the absence of any change in the external appearance of the nose of each case seen since operation and since the taking of the picture.

**Saddle Nose.** In the cases of saddle nose my work has been confined to partial or complete, traumatic and specific in origin and associated with more or less marked deformity of the nasal septum, with the resulting defective breathing and catarrhal conditions. In the partial type the cosmetic work has been confined to the transplantation of portions of the septal cartilage, in several instances at the time of the septum resection, and in two cases to transplants of rib cartilage. In these cases it has been interesting to note that the transplant without perichondrium, absorbed after the lapse of a few weeks leaving a mass of scar tissue, while those with perichondrium remained as they were at the time of the transplant. In the complete types the transplant has been a portion of the ninth rib with its cartilage, the periosteum and medullary substance intact. In three cases, as shown in the plates, two split pieces were introduced, the upper piece with periosteum upwards, the lower down, so that both pieces have periosteum in contact with living tissue.

The operation for complete or partial saddle nose can be done with local anaesthetic using novocain  $\frac{1}{8}$  of 1 per cent. plus 5 or 6 drops of 1:1000 adrenalin solution, in addition to a hypo of scopolamin gr. 1/150 and morphine gr.  $\frac{1}{4}$ , or morphine  $\frac{1}{4}$  and atropine gr. 1/100, or ether anaesthesia can be used combined with local.

The technic is as follows: After cutting the hairs off the nose, the skin is mopped with benzine, well washed with salt solution dried, and then iodine solution is used liberally interiorly as well as externally. A post nasal gauze plug is introduced and the nose is well packed with gauze strips. The external nose is thoroughly infiltrated with novocain solution, introducing the needle anterior to the lateral nasal cartilage and then extending up the bridge of the nose to a point above the nasal process of the frontal and down-

ward to the tip of the nose; also an injection is made along the entire anterior border of the lateral cartilage on the side chosen for the incision. An incision is now under anterior to the lateral cartilage and carried along the bridge of the nose from the frontal region to the tip of the nose, making a sort of tunnel. This is carried downward to the maxilla in case it is necessary to mobilize the nasal bones. The periosteum is then elevated from the lower end of the nasal bone over the bridge upward to the naso frontal suture line. The ninth rib is now exposed and either a resection of the rib with  $\frac{1}{2}$  inch of the cartilage, the periosteum intact or an inlay cut with a circular saw. In my first four cases I followed the Carter method, removing the end of the rib with the periosteum intact. Since then I have followed the suggestion of some eastern men and have cut out an inlay with a circular saw as it is a simpler method. Great care is also necessary to get the grafts the exact width, length and thickness, and due allowance is to be made for the swelling of tissue following infiltration as that frequently gives the impression of over-correction. Iodine should be used liberally before the introduction of the graft. The graft is now introduced and one suture in the intranasal cut should be put in near the top of the nose and the rest left open for drainage. Adhesive straps are applied from cheek to cheek, care being taken not to dislodge the grafts, as the adhesive is molded to the nose. The adhesive should be carefully removed in forty-eight hours with benzine and reapplied if necessary.

The technic for partial saddle nose or notched nose is the same as described above.

It has been my habit to resect the nasal septum at the time the transplant is made, and have therefore made use of the septal cartilage for the transplant when it is sufficient. This is done because it is straight, is less liable to curl up as in the case of rib cartilage and especially so if it is accidentally put in salt solution. No packing is put into the nose unless the septum is resected at the time the plastic is done. If the original injury has resulted in a broadening of the nose the nasal bones should be cut loose from their attachment to the maxilla with a saw or the Lothrop slot forceps and the attachment to the frontal with a fine chisel, or the Carter chisel forceps, and finally lifted up and molded into position. The prominent portion of the maxilla should now be beveled with a proper file or rasp. So far I have not found it necessary to use the Carter bridge splint to keep the nasal bones in their new position, and the graft seems to prevent the contraction of the skin from forcing the nasal bones back into their old position.

The only other condition where cartilage transplants have proved of value has been in the collapse of the alar cartilage of the nose. This condition is most annoying to the patient and is the principal cause of unsuccessful attempts to give perfect nasal respiration. By that I mean when a resection of the septum is carefully performed and enlarged turbinates trimmed down. This de-



Cast I—Before.



Case I—After.



Case II—Before.



Case II—After.



Case III—Before.



Case III—After.



Case III—Side View. Before.



Case III—Side View. After.



Case IV—Before.

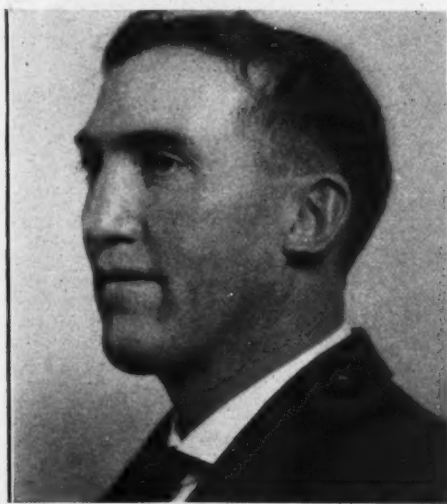


Case IV—After.

Cases I, II, III, IV—Bone and cartilage transplants, ninth rib.



Case V—Before.



Case V—After.

Case V—Corrected with cartilage taken from the septum.





Case I—X-ray.



Case II—X-ray.



Case III—X-ray.



Case IV—X-ray.



Case VII—Before.



Case VII—After.

Case VII corrected with cartilage taken from the septum.



Case VI—Before.



Case VI—Before.

Case VI shows in picture one the extreme width of the nose at the maxillary-nasal region. The lateral deformity was corrected by cartilage taken from the septum.



Case VI—After.



Case VI—After.

formity is most satisfactorily taken care of by making an incision in front of the anterior border of the lateral cartilage and planting in a piece of cartilage which has been removed from the septum. Then introduce two or three silk sutures and cover the line of incision with a small strip of gauze soaked in Tr. Benzoin Comp.

The cases which are presented herewith are all traumatic in origin, except one which is luetic; of the former nothing is worthy of special comment.

The interesting point in the luetic case, probably congenital in origin, is that following a resection of the septum, to improve breathing, the luetic condition seemed to fulminate with the result that the entire septum was destroyed and with it a large portion of the hard palate. In her case, a

layer of rib and cartilage was introduced and under it another piece of cartilage. The latter became infected and in spite of the frequent daily use of the strong iodine solution, Dakin solution and vaccines, the pus did not show signs of decreasing until what was left of the cartilage was removed.

#### CONCLUSIONS.

1. In the large majority of cases the transplant will take, if the patient is healthy, has good resistance and no visible nasal infection.
2. Luetic cases are not good subjects and the grafted tissues more liable to infection, in spite of plenty of anti-luetic treatment.
3. It makes very little difference whether the bone comes in contact with the periosteum of the

nasal bones or not. If no infection occurs the graft will be nourished.

4. The bone and bone salts undoubtedly absorb and fibrous tissue takes its place, a real consideration, especially when two grafts are introduced, one parallel to the dorsum of the nose and one parallel to the anterior border of the lateral cartilage. When the absorption occurs more flexibility of the end of the nose results.

5. In the event of an infection of the graft, its bone retention before removal frequently will have a mass of granulation tissue from which will organize and take the place of the transplant. Therefore the rule should be not to remove the graft until absolutely necessary.

#### Discussion.

Dr. S. Haas: As far as rhinoplasty is concerned I have had no experience, but I have had some experience in the transplantation of bone and cartilage in other parts of the body. All I shall say will pertain to that subject. We can all see that Dr. Selfridge has obtained good results from the cosmetic standpoint. The interesting part of his paper to me is that part regarding the fate of the transplanted segments of cartilage and bone. I have only read a few papers on the fate of bone transplanted into the nose, but all have had the experience of Dr. Selfridge in that the transplant gradually disappears. This would not be the case if the transplant was in some other part of the body, because we know that a transplant in contact with living bone will continue to live—there will not be a disappearance of bone. It would be interesting to find some explanation for the difference in the behavior of a transplant into the region of the bones about the nose and, for instance, into a bone of the leg. It is possible that this variation in results is due to the difference of the osteogenetic power of the nasal and frontal bones. We know that membranous bones do not regenerate as quickly as the cartilaginous bones, and as the nasal and frontal are membranous bones, it is possible that this fact has some bearing on the subject. Also, that the area of contact is not so broad in a transplant impacted on these bones at the base of the nose. Dr. Davis, in a series of experiments, has taken sections of the rib and costal cartilage and transplanted them so that they were in contact with the temporal bone of the skull; he found uniformly that the bone, either with or without periosteum disappeared but that the cartilage always persisted, and from that standpoint has advised using cartilage grafts in the nose.

Cartilage naturally is more transplantable than osseous tissue. In the first place, it receives its nourishment by imbibition and not by direct blood vessel supply. In experimental work, everyone has found that cartilage will persist indefinitely, although I think Dr. Selfridge said that in one of his cases he found that the cartilage was substituted by fibrous tissue. Whether the perichondrium is on the cartilage or removed, seems to make but little difference.

As regards operating by the external or internal method, I think the internal method is the better. Some have fear of infection of a transplant made from within the nose, but that seems to be obviated by a fairly rigid asepsis. Even if a mild infection takes place, it does not mean that the transplant is a failure, in fact it has been shown that a limited degree of inflammation stimulates the osteogenesis in a bone graft. The transplant in the nose, when rib with its costal cartilage is used, corresponds to the transplantation of the articular end of a bone. We know that you can transplant, experimentally in animals, the articular ends of bones; and also that it has been done successfully in human beings.

## DIAGNOSIS AND TREATMENT OF ACIDOSIS, ESPECIALLY IN DIABETES.\*

By ALBERT H. ROWE, M. S., M. D., Oakland, Cal.

It has been known for a long time that the reaction or H-ion (H) concentration of body fluids remains practically constant in spite of the normal production of many metabolic acids and the ingestion of the alkaline and acid foods. Through the work of Henderson<sup>1</sup> we now know that the maintenance of this definite H-ion concentration is due to the buffer action or alkali reserve of the blood along with the elimination of acids by the lungs and kidneys. He has shown that this buffer action is largely due to the carbonates of the plasma and to a less extent to the phosphates of the corpuscles. Robertson,<sup>2</sup> moreover, found that blood proteins are about one-fifth as efficient as the carbonates in this buffer action. It is by the process of hydrolysis that carbonates yield hydroxyl ions and that phosphates yield hydroxyl and hydrogen ions (depending on whether they are primary or secondary phosphates). The proteins, being amphoteric, can neutralize either acid or base. Thus, for example, if you take an aqueous solution of two phosphates  $\text{Na}_2\text{HPO}_4$  and  $\text{NaH}_2\text{PO}_4$  in such proportion that a neutral reaction occurs with the indicator methyl red, it will be found that considerable quantities of acid have to be added to the solution of phosphates to produce a change in tint, whereas a drop of acid is enough to change water plus the indicator to the same tint. The phosphates take up the excess of the H-ions like a sponge, or less strictly as a buffer. This same chemical reaction is continually occurring in the blood, mainly though, by the carbonates and proteins. Acids produced in the tissues combine with these buffer substances and are carried to the kidneys or lungs where they are unloaded and excreted, thereby keeping the reaction of the blood normal.

In certain pathological states, an increased production of acid occurs which results in a decrease in the alkaline reserve of the blood. When this production of acid is persistently excessive, the alkaline reserve may be lost completely, after which the reaction of the blood becomes acid and life soon becomes impossible, as in diabetic coma.

Besides this buffer action of the blood, the body possesses, as before stated, other important defenses against abnormal production of acids.

(1) Acids formed in the body are neutralized, to a certain extent, by uniting with ammonia which is normally produced during metabolism, and the resulting salts are excreted by the kidney. Thus when large amounts of ammonia are found in the urine, we can assume possible acidosis.

(2) Henderson has called attention to the remarkable excretion of non-volatile acids by the kidneys. By some specific mechanism acids are separated from bases, an acid urine being secreted

\* Read before the Medical Society of Alameda County, California, November 7, 1916.

1. Henderson, L. J.: *Ergebn. d. Physiol.*, 1909, viii, 254; *Jour. Biol. Chem.*, 1911, ix, 403; *Science*, 1913, xxxvii, 389.  
2. Robertson, T. B.: *Jour. Biol. Chem.*, 1910, vii, 351; *Jour. Biol. Chem.*, 1909, vi, 313.



from an alkaline blood. Non-volatile acids thus excreted are B-oxybutyric, diacetic, and lactic acids. When the kidneys are called upon to excrete excessive amounts of these acids, irritation results and the excretory power diminishes with consequent piling up of these acids in the blood and tissues and a decrease in the alkaline reserve or buffer action of the blood, which finally results in an increase in the H-ion concentration.

(3) Volatile acids, chiefly of course  $\text{CO}_2$ , are excreted by the lungs. The  $\text{CO}_2$  passes from the capillary blood into the air of the alveoli until the  $\text{CO}_2$  tension in the blood equals that in the alveolar air. The blood carries as much  $\text{CO}_2$  as its reserve alkali can take up. As acidosis develops, the reserve alkali decreases and less  $\text{CO}_2$  is carried by the blood, thus reducing its tension in both blood and alveolar air. By a determination of this  $\text{CO}_2$  tension from the blood or air, the amount of alkali reserve or the buffer power of the blood is determined and therefore the absence or presence of acidosis is ascertained.

The cause of acidosis usually has been assumed to be due to incomplete combustion of fats. Other theories as to the cause of acidosis have been advanced. Allen<sup>3</sup> recently has reviewed all of these theories in light of his extensive experience with the fasting treatment and finally says that though some empiric observations exist, fundamentally nobody knows anything about acidosis. Wood-yatt<sup>4</sup> seems more definite, saying that acidosis results whenever 1 part of carbohydrate is not burned to every 3 of fat or protein; that acidosis comes from the incomplete combustion of proteins as well as of fats. His excellent paper points out the absence of a sharp line of division between the diabetic and non-diabetic acidosis and is well worth careful study. Howland and Marriott<sup>5</sup> consider that the acidosis occurring with severe diarrhoea in infants is not due to acetone bodies but probably to a deficient excretion of acid phosphates by the kidneys. Peabody<sup>6</sup> considers the acidosis, which occurs in nephritis and in decompensated cardiac cases, due to incomplete excretion of probably normal amounts of acid in the blood and is doubtful whether any definite increased formation of acids in the tissues occurs. Chapin and Pease<sup>7</sup> most recently consider the cause of acidosis in babies due to excessively high protein diets, a damaged intestinal-epithelium, and consequent absorption of poisonous protein-split products due to bacterial decomposition.

Thus, the cause of acidosis, as Allen says, seems to be an unsettled question. Yet we do know enough about it, empirically at least, to diagnose it definitely and prevent and treat it more successfully than ever before. This is of especial importance in the treatment, of course, of diabetes.

#### DIAGNOSIS OF ACIDOSIS.

##### (a) Clinical.

Observation of the patient is most important. If anorexia, nausea, vomiting, restlessness, unusual fatigue, excitement, irritability, vertigo, tinnitus aurium, drowsiness, sluggish mental and physical reaction, listlessness, discomfort, painful or deep breathing is noticed, acidosis must be thought of and a complete investigation respecting the elimination of acids by the body should be made by laboratory methods.

##### (b) Laboratory methods.

###### (1) DIACETIC ACID.

This is the simplest test to detect acidosis. Gerhardt's method is performed by adding a few drops of strong aqueous solution of ferric chloride to about 10 c.c. of urine. A precipitate of ferric phosphate first forms which dissolves upon the addition of a few more drops. The depth of the burgundy red color is an index of the amount of diacetic acid present.

It must be remembered that salicylates, bicarbonates, coal-tar drugs, cyanates, and acetates will give positive tests. These false reactions though persist after boiling for two minutes, which process breaks down the unstable diacetic acid.

This test is most valuable when it is negative, though severe cases of acidosis may occur where the ferric chloride reaction is negative, as recently reported by Chapin and Pease<sup>7</sup> and mentioned in the summary of Allen's Treatment in recent numbers of the A. M. A.<sup>8</sup> Markedly positive reactions, on the other hand, may occur when there is very little acidosis present. Thus this reaction should always be controlled by the tests which are to be described.

Acetone has been shown by Folin<sup>9</sup> to play a very small part in acidosis. Folin, moreover, has demonstrated that the substance in the urine which gives the so-called acetone test is really diacetic acid. This test, therefore, has been discarded.

###### (2) AMMONIA.

As pointed out before, the quantity of ammonia in the urine is a measure of the acidosis present in the body. The estimation of the total amount of ammonia in the 24 hr. urine is the best urinary test for acidosis; yet, as Henderson<sup>10</sup> recently said, neither ammonia concentration nor urinary findings are safe guides. As soon as alkali therapy is started the excreted ammonia falls in amount. The normal amount of ammonia in the urine varies between 0.5 and 1 gram, the ratio between the ammonia nitrogen and the total nitrogen in the urine is and remains fairly constant at about 1 to 25, or 4 per cent. Two tests are given for the determination of ammonia. Though both are simple, the titration method is best suited for office work, its results being reliable though usually slightly too high.

3. Allen, F. M.: Jour. Amer. Med. Assn., 1916, cxvii, 1525.
4. Wood-yatt, R. T.: Jour. Amer. Med. Assn., 1916, cxvi, 1910.
5. Howland & Marriott: Amer. Jour. Dis. Child., May, 1916, 399; Arch. Int. Med., Vol. xviii, 1916, 708.
6. Peabody, F. W.: Amer. Jour. Med. Sc., 1916, cli, 184; Arch. Int. Med., 1915, xvi, 955; Arch. Int. Med., 1914, xiv, 236.
7. Chapin & Pease: Jour. Amer. Med. Assn., 1916, lxxvii, 1351.

8. Treatment of Diabetes: Jour. Amer. Med. Assn., 1916, lxxvii, 1021.
9. Folin, O.: Jour. Biol. Chem., 1907, iii, 177; Jour. Amer. Med. Assn., 1907, xlix, 128.
10. Henderson, L. J.: Jour. Amer. Med. Assn., 1916, lxxvi, 1884.

(a) *Folin's Method for Determining Ammonia (Joslin's Modification)*<sup>10</sup> (Fig. 1).

"Of the urine to be tested 1 or 2 c.c. are pipetted, by means of an Ostwald pipette, into tube A. Two or three drops of kerosene and a few drops of potassium oxalate, potassium carbonate solution (which contains 15% each), are added and the stopper quickly inserted.

"By means of a suction pump the ammonia is drawn over into tube B, which contains 10 c.c. of N/70 hydrochloric acid. Tube A is connected with a wash bottle containing 10% sulphuric acid, so that when the air is drawn through the urine it will be completely ammonia-free.

"For the first minute aeration should be slow, then the air current may be as rapid as the apparatus will stand. Aeration should be complete in from twenty to thirty minutes and the excess acid is titrated with N/70 sodium hydroxide. The amount of acid used by the ammonia times 0.0002 gives the amount of acid used times 0.00024 gives the amount of ammonia in the quantity of urine (1.0 or 2.0 c.c.) used for the test, and from this the amount of nitrogen or ammonia in twenty-four hours may be easily computed.

"The glass tube which passes nearly to the bottom of tube B is sealed at the lower end, but contains a number of small holes, which allow only fine bubbles to pass into the receiving acid and thus aids in the complete absorption of the ammonia."

(b) *Ronchese-Malfatti Method for the Determination of Ammonia.*

"(a) To 25 c.c. of urine in a 200 c.c. Erlenmeyer flask, add about 25 c.c. of distilled water, about 10 grams (1 to 2 teaspoonfuls) of powdered potassium oxalate, and a few drops of indicator (phenolphthalein). Shake a few times to dissolve the oxalate, then titrate with one-tenth normal sodium hydroxide until the first faint pink color is permanent.

"(b) Take 5 c.c. of commercial formalin solution in a test-tube, add a few drops of phenolphthalein indicator, then titrate with one-tenth normal sodium hydroxide until a faint pink is obtained.

"(c) Add this neutralized formalin to the urine, which has just been titrated, and titrate again with one-tenth normal sodium hydroxide until the previous pink is again obtained.

"Calculation: The number of cubic centimeters of one-tenth normal alkali used in titration (c) multiplied by 0.0017 gives the number of grams of ammonia in 25 c.c. of urine.

"No account need be taken of the amount of sodium hydroxide used in titrations (a) and (b).

"The method depends upon the fact that formalin combines with free  $\text{NH}_3$  and forms hexamethylenetetramine. The ammonia is liberated from its salts by means of  $\text{NaOH}$ ."

(3) CARBON DIOXIDE TENSION OF THE ALVEOLAR AIR.

Marriott's<sup>11</sup> method for determining the alveolar  $\text{CO}_2$  tension is by far the easiest of reliable tests for the investigation of the alkali reserve of the body. The normal  $\text{CO}_2$  tension in the alveolar air is about 46 mm. of Hg., 35-30 indicating a slightly dangerous acidosis and 30-20 showing danger of approaching coma.

MARRIOTT'S TECHNIC FOR DETERMINATION OF ALVEOLAR  $\text{CO}_2$  TENSION.\*

"With an ordinary atomizer bulb, which will deliver approximately 50 c.c. of air, force approximately 600 c.c. of air into the 1000 c.c. rubber bag and clamp the outlet tube with the pinchcock. While the subject is at rest and breathing naturally and at the end of a normal expiration, place the tube in the subject's mouth and close his nose, allowing him to breathe from and into the bag four times in twenty seconds, emptying the bag with each inspiration; the observer should indicate when breathing should be in or out. More frequent breathing will not greatly alter the results. After breathing twenty seconds, at the end of an expiration and while the bag is inflated, clamp the tubing with the pinchcock and use the air contained in the bag for analysis. The analysis should be made within three minutes, as carbon dioxide rapidly escapes through rubber.

In the case of comatose patients, the 1500 c.c. rubber bag should be inflated with at least one thousand cubic centimeters of air. The comatose patient should be allowed to breathe out of and into the bag for at least thirty seconds, since it is not feasible to have him completely empty the bag of air, at each inspiration. It is necessary to use some form of mask.

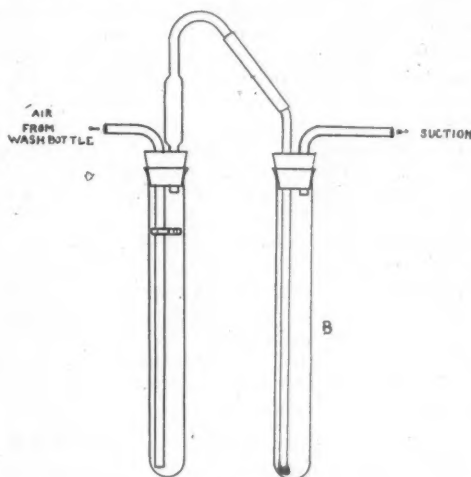


Figure 1.  
Folin's aëration apparatus for determination of ammonia (Joslin).

11. Marriott, W. M.: Jour. Amer. Med. Assn., 1916, lxxvi, 1594.

\* Note: These directions apply to the apparatus which can be obtained from Hynson, Wescott, and Dunning, Baltimore, Md.

10. Joslin, E. P.: Treatment of Diabetes Mellitus, 1916, Lea & Febiger; Arch. Int. Med., 1915, xvi, 693; Amer. Jour. Med. Sc., 1915, cl, 485.

A mask is also necessary for collecting alveolar air from infants. This may be improvised as suggested by Dr. Marriott.

#### TECHNIC OF ANALYSIS.

Fill the test tube one-fourth full with standard bicarbonate indicator solution. (This solution may be used for several determinations provided it has not been diluted or in any other way contaminated.) Then place the capillary nozzle tube in the outlet tube of the bag and, by releasing the pinchcock, allow the alveolar air from the bag to pass rapidly through the solution in the test tube for about one minute or until no further color changes occur. The tube is then stoppered and the color immediately compared with that of the standard solutions, by placing it in the center section of the comparison box and the standard solutions most nearly approaching its color on either side. Examination should be made, if possible, at temperatures from 20 to 25 C. (68 to 77 F.); if the room temperature is above or below this, the specimen should be immersed in water at about 25 C. while being saturated with the gas being examined.

Duplicate tests should be made since errors in technic lead to too low rather than too high results.

Fredericia's<sup>12</sup> Method is another simple way to determine the alveolar CO<sub>2</sub> tension. The reader is referred to his original article and especially to the excellent description of the technic which Joslin<sup>10</sup> has included in his recent book. For a hospital this method is excellent but for the practitioner Marriott's Method is far better.

Haldane's<sup>13</sup> apparatus estimates the CO<sub>2</sub> tension very simply in samples of air collected by the Plesch method modified by Higgins. But the apparatus is somewhat expensive and only suitable for larger laboratories.

Walker and Frothingham<sup>14</sup> have shown that results obtained by analysis of alveolar air by Haldane's apparatus check up with the results obtained by Van Slyke's method of analyzing blood plasma. But the alveolar air determinations are subject to small variations. Peabody<sup>6</sup> mentions slight variations due to diet, the CO<sub>2</sub> tension being high with a carbohydrate diet and lower with a protein diet. Altitude also affects the CO<sub>2</sub> tension slightly. Stillman<sup>15</sup> has pointed out that this alveolar CO<sub>2</sub> tension is an accurate indication of the alkali reserve in the blood only when respiration and circulation behave in an entirely normal manner, increased ventilation of the lungs or dyspnoea lowering the CO<sub>2</sub> tension. Thus the most accurate method for determining the alkali reserve of the blood seems to be by Van Slyke's method.

#### (4) CARBON DIOXIDE TENSION IN THE BLOOD.

Van Slyke's method directly estimates the amount of CO<sub>2</sub> the plasma can take up and thus the alkali reserve of the blood. I have found this

method together with the former one of Marriott's the most suitable and accurate at present available to complete our knowledge of the acid condition which is to be obtained from the ferric chloride and ammonia determinations in the urine. Van Slyke has not published the technic of his method himself though he has written a description of it for Dr. Joslin's recent book.<sup>10</sup> A brief account of this method has been recently given by Macleod.<sup>22</sup>

#### VAN SLYKE'S METHOD FOR DETERMINATION OF CO<sub>2</sub> TENSION IN BLOOD PLASMA.\* (Fig. 2.)

"Blood is centrifuged and a few c.c. of the plasma shaken in a flask containing 6% CO<sub>2</sub>. Alveolar air is suitable for this purpose. The apparatus is meanwhile filled to the top of the graduated tube with mercury by raising the mercury reservoir F, care being taken that D and E are also filled. One c.c. of the CO<sub>2</sub>-saturated

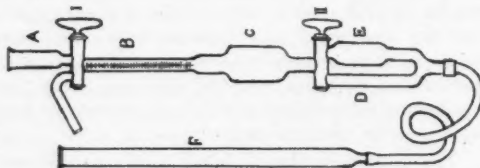


Figure 2.  
Van Slyke's apparatus for determination of CO<sub>2</sub> Tension in Blood Plasma (Macleod).

plasma is then delivered into A and the stopcock I turned so that by cautiously lowering the level of the reservoir F, the plasma runs into B (but no trace of air). The same procedure is repeated with 1 c.c. water, so as to wash in all of the plasma, and finally 0.5 c.c. normal acid (approximately 5% H<sub>2</sub> SO<sub>4</sub>) is sucked in, after which stopcock I is turned off. The reservoir F is then lowered sufficiently to allow all of the mercury, but none of the blood, to run out of B and C.

"As the level of the mercury falls in B and C, the plasma effervesces violently, because it is now exposed to a vacuum. To be certain that all traces of CO<sub>2</sub> have been dislodged from the solution, the apparatus is shaken. To ascertain how much CO<sub>2</sub> has been liberated, stopcock II is now turned so as to bring C and E into communication, and by cautiously lowering the reservoir the fluid in C is allowed to run into the bulb E. Stopcock II is thereafter turned so as to connect C and D, and the reservoir raised so that the mercury runs into C as far as the CO<sub>2</sub>, which has collected in the burette, will permit it to go. After bringing the level of the mercury in F to correspond to that in the burette, the graduation at which this stands is read. It gives the c.c. of CO<sub>2</sub> liberated from the plasma. Under the above conditions normal plasma binds 65.90% of its volume of CO<sub>2</sub>; therefore indicating 53 to 77 volume per cent. of CO<sub>2</sub> chemically bound by the plasma. Figures lower than 50% in adults indicates acidosis."

12. Fredericia: *Berl. klin. Wehnschr.*, 1914, II, 1268.

13. Haldane & Priestley: *Jour. Physiol.*, 1905, xxxii, 225.

14. Walker & Frothingham: *Arch. Int. Med.*, 1916, xviii, 304.

15. Stillman, E.: *Amer. Jour. Med. Sc.*, 1916, cli, 505.

\* This apparatus can be obtained from E. Greiner, 55 Fulton street, New York.



Marriott<sup>16</sup> has recently described a method for the estimation of CO<sub>2</sub> tension of the blood plasma. The apparatus and technic are simple but do not assure the same degree of accuracy as does Van Slyke's method.

(5) The alkali reserve or the buffer action of the blood might be determined accurately and easily by titrating serum between two H-ion concentrations by means of indicators in a manner similar to the method by which Marshall<sup>17</sup> has recently determined the buffer action of saliva. I expect to report some observations with this method in the near future.

Sellard's<sup>18</sup> "alkali tolerance" test gives a fairly accurate idea of the degree of acidosis present in the body, but it cannot be well used in diabetes since it uses sodium bicarbonate, which is objectionable as a routine.

Sellard's<sup>19</sup> test for titratable alkalinity was of definite clinical value until Marriott's and Van Slyke's more applicable methods appeared.

Levy, Rowntree and Marriott's<sup>20</sup> simple method for the determination of the H-ion concentration of the blood is easy to carry out, but does not yield as valuable information as does an estimation of the alkali reserve of the blood either directly or by the alveolar air analysis.

Levy and Rowntree<sup>21</sup> have also proposed a method to estimate the buffer action of the blood directly which is briefly given by Macleod<sup>22</sup> in a recent article in which he mentions some very evident drawbacks.

Van Slyke, Stillman and Cullen<sup>23</sup> recently proposed a method the details of which have not been published, which evidently will be free from some of the objections to the former method.

#### TREATMENT.

In beginning the treatment of any diabetic, it is most important to investigate thoroughly the power of elimination of acids by the body. This precaution deserves special emphasis. A routine ferric chloride reaction, ammonia determination, a determination of the alveolar CO<sub>2</sub> tension, or better of the CO<sub>2</sub> tension in the plasma should be made. As the cases at the Rockefeller Hospital have shown, acidosis may develop during fasting and therefore these laboratory investigations should be continued throughout the treatment.

All writers agree that our aim should be to prevent rather than treat acidosis. Several measures have been found useful in doing this.

(1) Joslin<sup>10</sup> prevents acidosis in many cases by eliminating the source of supply of acid bodies. This he does by cutting out the fats from the diet and gradually eliminating the proteins and finally the carbohydrates from the diet. Sugar

often disappears without fasting, and if a fast is necessary, it is of short duration, and acidosis is not so likely to develop. This procedure is routine with Joslin. It is especially important in the obese, in diabetes of long standing, in patients with damaged kidneys, in children not accustomed to fat, in cases of infection and operative cases.

(2) Acidosis can be prevented if the patient's tolerance for carbohydrates can be improved, which is usually the result of correct modern treatment. Luthje's remark that one need not worry about acidosis when sugar is absent from the urine has some truth.

(3) To prevent acidosis in very fat individuals, a great weight reduction, thus doing away with the fat from which acid bodies might be derived, is often necessary.

(4) Alcohol was formerly given routinely by Allen<sup>24</sup> during fasting to prevent acidosis. But recent work by Higgins, Peabody and Fitz<sup>25</sup> indicates that alcohol has no apparent effect on the acidosis induced in normal subjects by taking a carbohydrate free diet and it is not settled that such an effect occurs in diabetics. Thus Allen<sup>26</sup> recently said that its use is valuable but not essential. Joslin gives it in his fasting treatment only when the patient is uncomfortable without it.

(5) In building up the diet after the fasting period acidosis can be prevented by the inclusion of as much carbohydrate as the patient can stand without a return of sugar in the urine.

When moderate acidosis is present as determined by complete laboratory tests, the following measures may help to dispel it:

(1) *Fasting*.—In using this method the alkali reserve of the blood should be closely watched for some cases of acidosis are aggravated by fasting. Foster<sup>27</sup> lays stress on these dangers from fasting. Allen says the most suitable cases for this method of dispelling acidosis are those that come in with acidosis, not having been on a strict diet. A remarkable case showing this is that reported by Geyelin and Du Bois,<sup>28</sup> well worth studying.

(2) *Feeding of Carbohydrate-Protein Diet*.—When acidosis is found by laboratory analysis to increase with fasting, then feeding of green vegetables and small amounts of protein is indicated.

(3) *Intermittent Feeding and Starvation*.—Joslin is able to dispel acidosis by this method which Folin and Denis<sup>29</sup> recently found was effective in destroying acidosis brought on by starving obese women.

(4) *Weight Reduction*.—Stillman<sup>15</sup> and Allen<sup>20</sup> emphasize the importance of great losses in weight especially in fat chronic diabetics in order to make acidosis disappear.

16. Marriott, W. M.: Arch. Int. Med., 1916, xvii, 840.

17. Marshall, J. A.: Amer. Jour. Phys., 1915, xxvi, 260.

18. Sellards, A. W.: Johns Hopkins Bull., 1912, xxiii, 289.

19. Sellards, A. W.: Johns Hopkins Bull., 1914, xxv, 101.

20. Levy & Rowntree, & Marriott: Arch. Int. Med., 1915, xvi, 389.

21. Levy & Rowntree: Arch. Int. Med., 1916, xvii, 525.

22. Macleod, J. J. R.: Jour. Lab. and Clin. Med., 1916, ii, 54.

23. Van Slyke, Stillman & Cullen: Proc. Soc. Exper. Biol. and Med., 1915, xii, 165.

24. Allen, F. M.: Jour. Amer. Med. Assn., Sept. 12, 1914, 939.

25. Higgins, Peabody & Fitz: Jour. Med. Research, 1916, xxxiv, 263.

26. Allen, F. M.: Amer. Jour. Med. Sc., 1915, cl, 480.

27. Foster, N. B.: Amer. Jour. Med. Sc., 1916, cli, 176.

28. Geyelin & Du Bois: Jour. Amer. Med. Assn., 1916, lxxvi, 1532.

29. Folin & Denis: Jour. Biol. Chem., 1915, xxi, 183.

(5) *Increase in Diet.*—Geyelin has found that some chronic cases of acidosis are helped by an increase in the caloric intake.

Alkali should only be given when laboratory tests show danger of approaching coma, i. e., more than 2.5 grams of ammonia and a CO<sub>2</sub> tension of 30 mm. of Hg. If the danger is slight, only small doses should be given until the CO<sub>2</sub> tension has been definitely raised. Allen and Joslin both emphasize the danger of too large doses of alkali. Joslin has only given 66 grams of bicarbonate in the last nine months, and that only to two patients.

But when coma is threatening, alkali should definitely be given. The section in Joslin's book on the treatment of coma should be consulted by all who wish to have a comprehensive modern idea of this important subject. He lays stress on putting the patient to bed, keeping him warm, and at rest. Bowels should be emptied. Elimination of acid bodies should be encouraged by a large fluid intake by mouth and colon and if necessary intravenously. A large amount of alkali should be crowded into the patient preferably by mouth but if this is impossible intravenously. Digitalis and caffeine should be given to support the heart and morphine to control the nerves.

#### CONCLUSION.

The importance of laboratory examinations of the urine, alveolar air, and blood in the diagnosis of acidosis and the conduction of the starvation treatment should be fully realized.

#### THE ETIOLOGY OF PELLAGRA.\*

By J. E. JENNISON, M. D., San Diego.

Pellagra is of more than academic interest to physicians residing in San Diego, as may be evidenced by the fact that I alone have seen at least nine cases of this malady during the last six years.

The etiology of pellagra has been as elusive as the Irishman's flea, of which he remarked, "Ye put yer finger on it and it ain't there." I will not attempt to review in detail the various theories which have been advanced, as that would make my paper far too lengthy for one evening's consideration. I will, however, refer to some of them very briefly, and then lead up to certain observations of my own, and from these I will venture my personal opinion as to the probable etiology.

The Zeist theory—that pellagra is caused by the consumption of spoiled corn products—held sway for more than 200 years. It was probably first advanced by Gaspar Casal of Spain in 1762, and under the skilful elaboration of Lumbroso, late in the 19th Century, it finally met with almost universal acceptance. At a somewhat later date, in our own country, Dr. Bass of New Orleans lent further support to the Zeist theory by producing experimentally what he believed to be pellagra, in chickens, by feeding them meal made from spoiled corn. Isadore Dyer confirmed these observations. The relationship between pellagra and

spoiled corn seemed well established by these and many other physicians. But the true nature of the etiological factor still remained a subject for much discussion and difference of opinion. Lumbroso contended that pellagra was caused by certain toxins formed in spoiled corn, by the action of saprophytic bacteria, which in themselves were harmless.

Other investigators attributed the disease to the direct action of bacteria, and many different bacteria were from time to time isolated from corn and its products, in the belief that they were the specific germs of pellagra.

At this juncture, Sambon, representing the British Pellagra Commission, appeared on the scene, with the declaration that pellagra was not due to the consumption of spoiled corn at all, but that it was an infection, due to some protozoan implanted in the blood-stream by some blood-sucking insect, possible sand-fleas, and he presented much plausible evidence in support of his views.

A little later, in the United States, the Thompson-McFadden Pellagra Commission, acting under the auspices of the New York Post-Graduate Medical School, also discredited the spoiled-corn theory, and in its report to the American Medical Association at Atlantic City in 1914 they reported in substance, as follows:

1. That pellagra was not caused by a corn meal diet, either good, bad or indifferent;
2. That no causative relation could be found between pellagra and any form of diet;
3. That a diet rich in fresh meats and eggs would not prevent it (Of this statement I will make further mention later.);
4. That pellagra was communicated from person to person.
5. That it was most prevalent in communities having open surface privies.
6. That it was essentially due to faulty disposal of sewage.

These conclusions would of course warrant the assumption that pellagra was caused by some living micro-organism, carried in some manner from these privies to the patients.

Attempts to connect the etiology of pellagra with the dietary continued however, and readers of medical literature noted about this time the frequent appearance of a new word, viz., Vitamines. Beri-beri, we were told, is caused by a diet from which these vitamins have been removed by the act of polishing rice. In like manner we were told that the modern process of milling corn destroyed these vitamins, by excessive heat, thus making a corn-meal diet provocative of pellagra, because of a deficiency of these very vitamins.

Most remarkable, because the most sweeping in its assertions, was the theory advanced by Dr. Joseph Goldberger, of the U. S. Public Health Service, and publicly announced by that department on November 12th, 1915. He concluded that a lack of animal and leguminous protein was the prime factor in the causation of pellagra, and particularly based this conclusion upon the results of experiments, notably two: the first, where 171 out of 172 pellagrin inmates at two orphanages

\* Read before the San Diego County Medical Society, August 1, 1916.

were apparently cured of pellagra by a proper regulation of the diet, and without the use of medicine; the other, at a convict camp where eleven healthy convicts were purposely placed upon a diet deficient in animal and leguminous proteins, with the result that in five months six of these convicts developed pellagra, and that, while no cases developed in any of the other convicts of the camp, of which there were many.

Thus it would seem that Goldberger could induce pellagra or remove pellagra whenever he was so disposed, by simply juggling the protein constituent of the dietary. Could proof be more convincing than this, that pellagra was not caused by the consumption of spoiled corn-meal in particular, nor by the bite of any disease-carrying insect, but that it was caused by a deficiency of certain elements of the diet? Not much time has been given us, as yet, to try out this theory, but recent medical literature is already showing evidence that the phenomenal results of Goldberger's experiments are not being duplicated.

Dr. A. W. Dumas of Natchez, Miss., reports in the July number of *Clinical Medicine* that he is finding pellagra as difficult to treat with the Goldberger diet as he formerly did without it. Also, Joblin and Peterson of Vanderbilt University, in the May number of the *Journal of Infectious Diseases*, takes issue with Goldberger. They specifically call attention to one family who conducted a grocery and butcher shop, to whom a daughter, suffering with pellagra, came home for a visit. The family consumed an excess of proteins both animal and vegetable. Eggs, ham, fresh meat and milk were partaken of freely, and yet a few months later two more cases of pellagra developed in this family. These investigators admit that the population of Nashville consumes much carbohydrates, but they assert that at least 68% of the 421 cases investigated by them gave a history of a diet sufficient in proteins and vitamins. They also call attention to the fact that the natives of Calcutta consume an average of less than forty grams of protein per day, of which only two grams is animal protein, and of course many fall far short of this very low average; and yet there is no pellagra in Calcutta.

Furthermore, they call attention to the fact that there are 12,651 open privies in Nashville. They therefore agree with the Thompson-McFadden Commission in connecting the etiology of pellagra with these privies.

Dr. Holmes of Chicago, representing the Illinois State Board of Health, gives us still another theory in the last March number of the *Archives of Internal Medicine*. He asserts that an excess of carbohydrates and a lack of lactic acid germs in the diet, leads to a pathological over-production of the bacillus *Welchii*, which finds a more or less natural habitat in the bowels, and that an excessive number of these same bacillus *Welchii* produce the symptom-complex of pellagra. He also surmises that the curative properties of the Goldberger diet were due not so much to the increase of protein but more especially to the presence of the lactic acid bacilli in the butter-milk which

formed a part of the diet, thus providing an antidote to the bacillus *Welchii*.

This, briefly, brings a summary of the medical literature, appertaining to pellagra, up to date. That it leaves the etiology of pellagra unsettled is, I think, obvious. That the dietary is an important element in the treatment of pellagra, as indeed it is in any disease, no one will deny, and that it likewise is a factor in the etiology has been well established, both clinically and experimentally. But that it is the exciting factor, or the specific factor, if you please, I do not believe, for it would be passing strange indeed if the population of our Southern States suddenly adopted such a badly balanced diet in or about the year 1907, when pellagra first became known in those States, and still more strange is it that there was no pellagra in the South during the Civil War, not even at Andersonville prison, if a mere deficiency in protein food alone could cause pellagra. Nor does it seem probable that it was prevalent but not recognized and diagnosed prior to 1907, for Dr. Lavender of the U. S. Public Health Service made diligent search for it in various charitable institutions of the South in 1909, without finding a single case in those institutions; and yet in 1915 one of these same institutions had 10% of pellagrins among its inmates, according to the report of Jobling and Petersen already referred to. I therefore feel disposed to agree with Dr. Beverly R. Tucker of Richmond, Virginia, who, in Vol. I of the 26th Series of the *International Clinics*, gives expression to the belief that Goldberger's six convicts merely suffered a loss of nutrition, and consequently of resistance, as a result of the restricted diet imposed on them, and that inasmuch as they lived in a community where pellagra was prevalent they simply became the victims of an infection which they in their reduced condition were unable to throw off, just as they might have acquired tuberculosis had they been exposed to it. And it does seem that an impartial review of the latest medical literature should incline us to accept with a grain of salt Goldberger's statement about the alleged cure of 171 out of 172 pellagrous children with nothing more by way of treatment than the giving of a carefully selected and well-balanced diet. To me it prompts the query: "Were they really cured?"

I will now make a few observations of my own, which are not altogether original with me, but which I have often pondered over ever since my first personal experience with pellagra.

I wish to call attention to the close analogy between pellagra, of unknown etiology, and syphilis, of known etiology—the latter being, as you know, due to a protozoan.

Pellagra tends to chronicity—so does syphilis.

Pellagra exhibits lesions of both the skin and the mucous membranes—so does syphilis. (And in passing I ask you to stop and reflect how really few diseases do cause lesions of both skin and mucous membranes.)

Pellagra exhibits a marked symmetry in its cutaneous manifestations—so does syphilis, especially in its earlier stages.



Pellagra, when uninfluenced by treatment, is subject to periodic exacerbations—so is syphilis, though it does not manifest the seasonal variations of pellagra.

Pellagra causes first an exaggeration and later a loss of certain reflexes, notably the patellar,—so does syphilis.

Pellagra leads to marked degeneration of the central nervous system, causing incoordination of motor nerves as well as a terminal insanity—so does syphilis.

Pellagra exhibits marked tendency to relapse after apparent cure—so does syphilis.

Pellagra in its acute form, especially the so-called typhoid form, shows pronounced and almost immediate improvement under the administration of the newer arsenical preparations, and that irrespective of the dietary, insofar as I have been able to observe—and so does syphilis.

Pellagra is not so easily influenced by this form of medication after the central nervous system becomes involved—neither is syphilis, because the invading organism has gotten beyond the reach of the drug.

Form this analogy I contend that there may be a relationship between the etiology of pellagra and that of syphilis, and I hold to the opinion that pellagra is caused by some as yet unrecognized protozoon, and I base this opinion on:

1. The observations of Sambon.
2. The observations of the Thompson-McFadden Commission, which indicated the communicability of pellagra, though they did not especially hold out for the protozoon nature of the infection.
3. The close analogy existing between pellagra and syphilis, the latter being of known protozoon origin.
4. The fact that pellagra may be favorably influenced by anti-protozoon medication, irrespective of diet.

### MALINGERING; ITS DIAGNOSIS AND SIGNIFICANCE.\*

By JOSEPH H. CATTON, M. D., San Francisco, Cal.

Malingering is the act of knowingly pretending the presence or the absence of disease; of knowingly causing disease; or of knowingly protracting an existing disease; the disease being referred to the person himself.

#### EXAMPLES FOLLOW.

1. Patient claimed that exposure to draught in shop was followed by chilliness, and development of a rash all over the body. Syphilis was indicated. He denied exposure and genital sore. Examination of penis showed large sclerotic scar; and Wassermann was positive. This patient was a malingerer in that he pretended the absence of disease.

2. A patient complaining of headache which he knows is non-existent, is a malingerer because he pretends the presence of disease.

3. A person producing a diarrhoea by means of

\* From the Department of Neurology and Psychiatry of the San Francisco Polyclinic.

violent purgation, in order that he may be thought ill, is a malingerer because he has caused disease.

4. He who wilfully neglects to carry out orders for treatment is a malingerer, because he may protract existing disease.

Cases of out and out malingering are exceedingly rare; but cases in which there is a larger or smaller element of malingering are very, very common. Many a wife malingers a little, that she may receive sympathy from her husband. A love-sick girl causes her sweetheart to return to her, after a quarrel, by the timely occurrence of a headache, or the like. Many of our street beggars are malingerers. In private practice the condition is rarely seen, except in the case of the woman who claims tuberculosis in order that an abortion may be done; the user of morphine who furnishes the most varied complaints in his plea for medication; and the pregnant woman who has carefully memorized the typical history of a fibroid and seeks to have "it" removed.

An acquaintance with malingering is most important; and at this particular time for three main reasons; and they increase in importance in the order given.

1. Municipal and other charitable hospitals attract malingerers, and the wards of these institutions must be kept active.

2. With the advent of more and more legislation along the line of Workmen's Compensation, Employer's Liability and Social Insurance the doctor will be brought in touch with a greater and greater number of patients who will malinger, and

3. At this time of most vital importance; men will malinger against enlistment into the service of their country; and soldiers of this type, having enlisted, will seek to avoid duty.

As an example of the indigent who malingers in order to remain in a free hospital, the following case is cited:

Case A.: Patient admitted to the San Francisco Hospital because of pains in various joints. One knee had been swollen previously. There were at no time any local objective signs of joint disturbance; there were neither fever or leukocytosis. The patient was, however, completely worked up with the result that the only positive diagnoses were slight disturbance in a couple of teeth, and a slight anemia. Teeth were attended to and medication given for the anemia, but the joint complaints were still present after three or four weeks. On explanation to the patient that there was absolutely no cause for joint pains, they disappeared gradually, but there coincidentally developed a rash. Latter was distributed on front of thighs, on left arm, and on left shoulder and consisted of easily recognizable scratch marks, none of which were out of the reach of her right hand. Patient overheard discussion as to the nature of these lesions and immediately assumed a typical attitude of defense. She gave up all her complaints and from then on, insisted simply that she had no place to go when she should leave hospital. The social status is usually the basis of malingering in these individuals; and the workers

in social service must take the burden of eliminating these pretenders after they have been recognized.

As regards insurance; it has been the experience abroad and in this country, that with the carrying into effect of legislation for Workmen's Compensation and the like—the number of non-fatal accidents, the number of days of incompetency following, and the number of complications due to accidents in the industries—have rapidly risen. Formerly, a workman, realizing that he must get back to work in order to provide for himself and his family, had no inclination to delay things; but today he is sometimes better off when "sick" than well. For example:

Case B.: Caught arm in machine two years ago. At the time was making \$90 per month. Had an operation to repair the superficial tissues of right arm: there remained a scar about four inches long across anterior surface of right forearm. He was given compensation of \$25 per month and a job as watchman at \$75 per month. Since that time he says he has had pain and anesthesia below scar and contracture of fingers of right hand; says he cannot open latter. Fingers were involved gradually and in succession from little finger toward thumb. Has seen fifteen doctors; had another operation in which it was proven the scar did not include the flexor tendons. When last seen, claimed the index finger had become completely flexed during the last few weeks, and was now immovable and that the thumb would probably follow. The following contradictions in his complaints and actions show that in certain respects he was a malingerer; in a measure also, a method of attack for detecting contradictions is outlined.

When asked to move right index finger, patient said: "I could not move that finger if it would save my life—if this house were on fire—if you placed \$10,000 there before me, etc.," and so saying he kept his right index finger in almost complete flexion. But under the pretence of being a fellow patient, he had been seen, by the writer, to use his right index finger, alternately flexing and extending it, as he undressed; and was seen to quickly place it in "permanent" flexion when Dr. T. (whom he knew to be his examining physician) entered.

When Dr. T. extended the fingers of the patient's right hand the latter said: "If you had the excruciating pain I have, you would jump through the ceiling." But, during this "pain" there was no increase in pulse rate, nor change in facial expression indicating pain.

With his eyes closed, when his left arm was touched with a warmed forceps, he said: "That's so sharp it burns" and when his right arm below the scar was touched, "you didn't touch me." But, he denied having any feeling in the latter area, and should not have known when to say "you didn't touch me," as stimulation was not applied in rhythmic succession.

Having forced open his hand and placed a handkerchief under the fingers, he removed handkerchief, and his attention being diverted he kept all

of his fingers partially extended. But he had said they were always flexed so as to approximate themselves to palm.

He was supposedly insensitive to pin pricks in certain area below scar, but when Dr. T. left room the pin pricks in the "analgesic" area were the source of much annoyance.

Said he had "grit to bear jabs of pin in the dead area" but it requires no grit to bear pain in an analgesic area.

Says the index finger is now going through the stage other three fingers have finished and that thumb will probably follow in two months. Observation showed two sorts of habits for this index finger, the normal when patient thought he was not being watched and the deliberately assumed when examination was being conducted. Evidence pointed to a diagnosis of malingering as regards both the contractures in fingers and the sensory disturbances in arm.

It is indeed a pity that malingering should be resorted to in an attempt to avoid service to one's country. The psychology of malingering is not yet clearly understood, but the physician today may play his part if in addition to making himself ready to recognize the simulator, he will take a most firm stand and not be a party to a faked illness; and above all, never when it would hurt his country. There has been an abundance of malingering in the great war. Ten cases of simulated appendicitis have followed three real cases in a week; there has been picric acid jaundice; scratched urethras and injections of canned cream to fake gonorrhea; coal oil injections for plegmons; self-inflicted wounds; vesicants rubbed into skin for dermatitis; Russians have, with instruments, stretched the inguinal rings to produce hernia; white of egg has been injected into bladder for albuminuria; temperatures have been raised by having hot water in mouth just before reading, shaking mercury toward higher readings and by friction with the tongue; even known tuberculous sputum has been passed along and placed in fellow patients' sputum boxes. Medical men must muster all of knowledge and skill that they may detect accurately and quickly any of these demoralizing practices.

This paper is, therefore, a plea, that recognizing the significance of malingering, especially at this time, each and every case shall have a complete history, must receive a most complete examination, have all indicated laboratory investigations, and the opinions of every specialist for whom an indication may appear. A thorough knowledge of malingering presupposes a thorough knowledge of anatomy, physiology and pathology; and of clinical medicine, surgery and the specialties. This communication will attempt to point out only some of the broader considerations of malingering, not concerning itself with the specialties nor with detail.

The malingerer most often includes in his complaint, symptoms referable to the nervous system and for the purpose of this discussion patients will be regarded as: 1. Those having organic disease;

TABLE 1.

|                                   | Functional Disease and Malingering  | Organic Disease.   |
|-----------------------------------|---|--|
| Complaints, Syndromes,            | always disabling,<br>all atypical,<br>vary from time to time,<br>no anatomic basis,<br>may not desire to get well,  | not necessarily disabling.<br>tend to be typical,<br>fairly constant, maybe progressive.<br>anatomic basis.  |
| Mental Condition and Attitude     | maybe resistance to getting well,<br>tend to simulate,<br>defective health conscience,<br>exaggeration of symptoms,<br>statements not reliable,<br>may take up an impossible symptom when suggested to them.<br>(in case of head injury may remember events right up to and right after accident) | no tendency toward these.  |
| Reaction of degeneration, absent, |   |  |
| Muscle Atrophy, Flaccidity,       | maybe, from disuse,<br>maybe, without wasting,  | usually amnesia of events immediately before and after accident.<br>maybe present (depending on lesion),<br>maybe, organic.<br>with wasting.   |
| Contractures and Spasticities,    | may disappear under chloroform,   | do not disappear under chloroform.   |
| Tremor,                           | maybe, usually accompanied by dyspnoea and tachycardia.   | maybe; has accompaniments, as of multiple sclerosis.   |
| Sensory Disturbances,             | may include mucosae,<br>do not follow anatomy,<br><br>areas vary,<br>areas may be sharply delimited at mid-line.<br>PAIN, usually no accompaniments except "faces" and wiggling, etc.,<br><br>PAIN, over long period may not lessen appetite, nor weight.   | usually do not.<br>in segmental, root or peripheral nerve areas.<br>areas tend to remain constant.<br>usually are not.<br><br>usually accompanied by,<br>changes in pulse rate especially increase,<br>general restlessness,<br>characteristic facies,<br>flushing or pallor of face,<br>change in blood pressure especially rise, and dilatation of the pupils.<br>always leads to loss of sleep, appetite, and weight. |
| True Incontinence,                | never,  | maybe, if proper lesion.   |

TABLE 2.

| Malingering.  | Hysteric.  |
|---|--|
| Knows lesion to be false,<br>Lesion more disabling,<br>Hesitates,<br>Contradicts self,<br>Gets confused,<br>Indefinite,<br>Attempts to conceal number of sources of benefit,<br>Maybe, can't look examiner in face,<br>Exaggeration conscious,<br>No changes in sexual self,<br>Shrinks before he is touched,<br>"Starvation," but daily urine and stool!<br>"Yes-no-pin-test" maybe present.<br>(Have patient close eyes. Tell him quickly that you are going to prick him with pin, and to say "yes" when he feels it, and "no" when he does not. The malingeringer frequently says "no" when he is touched in an area which he claims is analgesic!) | Believes lesion true,<br>lesion less disabling,<br>answers without hesitation,<br>not nearly so marked,<br>not same tendency,<br>definite,<br>not usually. |
| Electrode test positive,<br>(Use faradic current. Have break key in one electrode. Suppose patient claims a tender area in back; apply current to various portions of back, and having the coil still humming, shut off current in electrode and touch tender area. Frequently malingeringer in his confusion answers that the "current" hurts him here more than in other areas.)  | can do this.<br>exaggeration unconscious.<br>changes in sexual self, maybe.<br>awaits definite testing.<br>Starvation with appropriate symptoms and signs. |
| Mapped out areas of sensory disturbances, may differ markedly at different examinations<br>"Limitation" of movements of spine, etc., not constant.  | absent.<br>electrode test negative.<br>Differ very little on repeated examination.   |
| Sensory disturbances anywhere,  | More constant.<br>Tend to be glove-like.   |

2. Those with non-organic or functional disease, and 3. Those with no disease, the malingeringers.

It is convenient, first, to differentiate organic disease on the one hand, from functional disease and malingering on the other, as the latter have much in common.

And, in addition, these signs must have an organic basis: Argyll-Robertson pupil; unequal pupils (synechia, etc. having been excluded); optic neuritis; persistent fast or slow heart; and a posi-

tive Wassermann or other positive laboratory findings. If patient's attention has been distracted, without doubt, and a Romberg is present, it is a sign of organic disease.

The table above shows that malingering has much in common with functional nerve disease, and that with it, it may be differentiated from organic disease. It then becomes necessary to differentiate malingering on the one hand, from hysteria, neurasthenia, psychasthenia and the traumatic neu-



roses on the other. The psychasthenic is rarely a conscious simulator. Traumatic neuroses are usually combinations of neurasthenic and hysterical symptomatology. The neurasthenic has many symptoms without organic basis, but his usual truthfulness is a good differential point. It is the differentiation of hysteria and malingering that is most difficult. The two conditions are, of all the non-organic conditions, most closely related. The table above shows many things they have in common; the hysteric tends on top of his hysteria to become a malingerer; if the malingerer simulates fits, they resemble hysterical ones. The following table, however, brings out certain of the differences.

So much for differentiation; but a warning. One must be thorough in investigation; avoid bias toward sympathy on the one hand, or harshness on the other, as examinations proceed. The final opinion must be honest; it must be firm. Every effort to gain information must have been used before branding a man a malingerer. For example:

Case C.: Woman, age 42 years, began to have malaise, irritability and crying spells, some slight gastric upsets and occasional constipation. One of the best clinicians in San Francisco, said: "Entire examination being negative, excepting a very slightly enlarged liver, I am looking on the case as one of nerve fag more than anything else and have prescribed accordingly." Symptoms, however, continued, and newer investigations disclosed a carcinoma of the cervix uteri, which was operated upon immediately.

Case D.: Patient in San Francisco Hospital. Numerous vague and varied complaints. After three months' investigation, nothing more than "flat feet" had been diagnosed. Patient was discharged as a malingerer. Returned after one month with same symptoms and visiting physician reported "very, very small amount of fluid in each chest and in abdominal cavity." Tapping of right pleural cavity and of peritoneal cavity gave specimens which on injection into guinea pigs produced tuberculosis.

As a sort of summary, it is useful to keep the following in mind:

#### STATUS.

Is patient being benefited by appearing ill? What insurance and compensation is there coming to a lodge member or working man when ill? Is the patient making more when sick than well? It must be kept in mind that by malingering, the underfed may eat; the hard worker may loaf; beggars make easy livings; the morphine user gets his medication; the indigent gets hospital care; and the soldier may be freed from duty.

#### FAMILY HISTORY.

Look for other neuropaths.

#### GENERAL CHARACTERISTICS.

Usually the malingerer is a neurotic, introspective, imaginative, pessimistic, hesitating, contradicting, confused, suspecting, indefinite, calculating,

exaggerating individual; with a very disabling complaint and a very loquacious vocabulary to describe it; and he insists on looking at his lesion while he talks of it, of liability, the shame of his being out of work and the like.

#### HISTORY.

Brings out atypical, inconsistent syndromes without anatomic or physiologic basis, and possibly the fact that the patient has not sought the best treatment, or having received expert advice, has not carried it out.

#### EXAMINATION.

Patients must be stripped. Examination must be most thorough. A man, undressed, has concealed a colotomy wound, made because of a rectal carcinoma,—by placing his hands on his hips and talking and laughing during his examination.

Have him observed while he undresses, through a concealed opening in a wall, a periscope, or better by another doctor or nurse. Divide his attention in an effort to get valuable signs and contradictions. This may be done at times by playing on his emotions, especially his characteristic ones. Record accurately and on different occasions the areas in which he complains of sensory disturbances, also the limits of joint motion. Have patient blindfolded for these examinations. The method of D'Arcy Power of using stereoscopic photography for permanent records is very valuable here. Try the yes-no-pin-test and the electrode test; or during a chest examination press stethoscope over supposedly tender areas without pain.

#### LABORATORY.

Either positive or negative evidence here is most valuable.

#### SPECIALISTS.

If malingering is suspected in the field of a specialist, appropriate consultation should always be called.

#### THERAPEUTIC TESTS.

Use of dark room and nauseating drugs; and the forbidding of reading and of visitors may verify a diagnosis.

In all investigations the potential disease must be kept in mind, just as definitely as the actual one. There must be recognized the aneurism that may rupture; the syphilis that may involve the nervous system; the tuberculosis that awaits trauma to locate itself; the neuropath who may become neurasthenic, and so forth: for the malingerer may find it advantageous to blame his new environment for his old complaints.

To conclude, the significance of malingering must be realized. It is a duty that physicians owe the State, insurance companies, employers and workmen and themselves; but most of all today—their country. A thorough knowledge of malingering is one of the vital pieces of equipment of the medical man as he serves his country in this war.

## REMOTE EFFECTS OF BRAIN TRAUMA.

(Symptoms, Course and Prognosis.)

By HAROLD W. WRIGHT, M. D., San Francisco.

Naturally in this article acute abscess, acute pachymeningitis or leptomeningitis, mental effects of sudden compressions or the acute traumatic apoplexies are excluded. We have here to deal with late abscess or cyst formation, localized sclerosis, post traumatic epilepsy, psychasthenia, hysteria and the traumatic psychoses. These conditions are of great importance in connection with workmen's compensation, chiefly because the onset of the permanent symptoms is usually weeks or months after the injury, and in the interval while resting from his usual work the patient may be apparently well. These cerebral defects resulting after injury are even more difficult of a fair interpretation than are the spinal cord disorders which also occur late and after a free interval. In cerebral injury and its remote effects we have to consider the personality of the patient, before the injury, e. g., the inherent defects and peculiarities which are aggravated by the trauma and the probable duration of the neurological signs which have become more evident since the injury. Tabes and general paresis or cerebrospinal lues may have existed in latent degree previous to injury and become aggravated by the shock or the other added effects of the trauma. The same may be true of epilepsy. A traumatic psycho-neurosis is a real thing and has a direct relationship to trauma and yet because of previously existing psychic defects it is difficult to estimate just how much the resulting disability can be attributed to the accident. For example, a neurasthenic or hysterical constitution may have added to it by trauma a distinct psychasthenia syndrome which is of indefinite duration and doubtful prognosis because of the pre-existing make-up of the patient. This difficulty is equally true of the traumatic psychosis in which there are many other possible contributing factors of causation to be considered.

### ABSCESS AND HEMORRHAGIC CYST.

The onset of symptoms of abscess may be from three to five weeks after the head injury, but not infrequently, the interval is months and even years. English reports a case with autopsy ten years after the injury. During the interval the patient may suffer from indefinite subjective symptoms referable to the head, such as headache of variable character, attacks of numbness or tingling of one limb, temporary attacks of aphasia or recurrent convulsions, before any of the symptoms of infection appear. Later, acute symptoms, such as fever, slow pulse, vomiting, optic neuritis and paralysis, referable to focal lesions, occur. Of these symptoms, optic neuritis is the most important, being often unilateral and corresponding to the side on which the abscess is situated. There is a characteristic mental state of apathy and somnolence with periods of restlessness and confusion.

The course of these symptoms is progressive but often very slow, death resulting from chronic

toxæmia or from bursting of the abscess into the ventricles.

The diagnosis has to be made from epilepsy, a psychosis, or tubercular meningitis.

What has been said of abscess is largely true, also of post-traumatic cysts which are the result of hemorrhage and softening of brain tissue. The course is, however, less progressive, the symptoms more focal and less general and the result a chronic epilepsy of Jacksonian type frequently, although general convulsions may also be the result of a focal lesion. Susceptibility to alcohol is increased by all head injuries of serious degree and the irritative effects of a cyst formation may be enhanced or produced by a moderate amount of alcohol.

### TRAUMATIC EPILEPSY.

Aside from the Jacksonian form of epilepsy due to focal lesions of a hemorrhagic-cystic nature or to scar formation, epilepsy of the same type as the idiopathic form can result from brain trauma even when no symptoms or signs relative to a focal lesion can be demonstrated. In such cases one has to distinguish between a pre-existing epileptic status and true traumatic epilepsy and to do this a very careful history dealing with symptoms of masked epilepsy such as psychical aberration or petit mal attacks or undue susceptibility to alcohol must be elicited. Where such symptoms are present in the previous history, the relation of trauma to the epilepsy must be given a position of secondary importance. There is no way of deciding the degree of importance of this relationship, except from the personal history, as the signs and symptoms of traumatic epilepsy and "idiopathic" epilepsy are the same in numerous cases. It is only when we have signs of focal brain irritation or destruction that we can be sure of the cause being traumatic. Furthermore, it should be remembered that epilepsy of traumatic origin may manifest itself either in Jacksonian or generalized attacks or very late after the trauma. For example, English found 21 cases out of 300 which developed after a year, and of these only seven were of the Jacksonian type. The statistics of the Craig Colony for Epileptics show that out of over 800 cases, in only one was there evidence of a fracture of the base of the skull, showing how many cases there are in which the gross injury is very slight. In many cases we must regard the head injury as only a spark which ignites a pre-existing epileptic constitution and this is especially true of an alcoholic patient.

It should also be noted that many cases may be the result of fright and the attacks be really hysterical in nature. To distinguish between true epilepsy and hystero-epilepsy is not always easy, especially if the actual attack is not observed. None the less, hysterical epilepsy is a real disease and just as incapacitating as true epilepsy but the prognosis is infinitely better.

While the time elapsing between the injury and the onset of epilepsy is not a definite guide to diagnosis, we may consider an epilepsy arising

many years after the trauma as not altogether due to it, for in persons past middle life arteriosclerosis or cerebral syphilis may be the real basis for the attacks. Traumatic factors figure as causes chiefly in youth.

When the attacks are Jacksonian in nature from the beginning, and other causative factors, such as cerebral syphilis or alcoholism can be definitely ruled out the relation of trauma to the attacks is fairly certain even if the attacks begin months after the injury and even if there has been no fracture of the skull at the time. Most attacks have begun within one year from the date of injury but there have been notable exceptions to this rule, e. g., a case reported by Lloyd and Deaver, in which five years after an injury a young man of twenty-one developed Jacksonian attacks; his skull was opened and neither fracture nor gross evidence of brain injury could be found.

#### TRAUMATIC PSYCHASTHENIA.

This is a condition of real disability due chiefly to headache, dizziness, irritability and abnormal susceptibility to fatigue, not differing in character from symptoms of ordinary neurasthenia of the primary form. Such patients are often unjustly accused of malingering. The headache in these cases is the most distressing of the symptoms and the most unresponsive to therapy. It may be due to bony exostosis, meningeal adhesions or to slight luxations of cervical vertebrae. More often the headache like the other symptoms is the result of some minute change in the cortical cells (possibly the result of the oedema which follows concussion) impossible of demonstration except by the history and symptoms and the improvement which gradually occurs when the patient is made free from responsibility and anxiety over the outcome of his condition. Such cases under rest and diversion and abstinence from stimulants, will recover in one or two years, provided there is no antecedent neurasthenic or psychotic taint.

#### HYSTERIA.

This disorder, when of traumatic origin solely, is perfectly recoverable, but its duration is apt to be very uncertain and somewhat dependent upon the confidence the patient has in his physician, and the earlier the diagnosis is made, i. e., before all sorts of other diagnoses have been suggested. As was said above, it may be very difficult at times to distinguish between real epilepsy and the hysterical form. The other manifestations of hysteria may lead to erroneous treatment which prolongs unnecessarily the period of disability, i. e., unnecessary operative procedures for hysterical pain, etc.; or the conditions may be aggravated by too much therapy of another sort, e. g., plaster casts for hysterical joints.

The instillation of confidence in the future outcome, and the education of the patient combined with rational suggestive psycho-therapy, will do much to clear up the diagnosis as well as to shorten the period of disability which is real enough, even though hysterical. In this connection we must refer to the form of "traumatic"

hysteria which subsides promptly upon the settlement of compensation. In Germany, by reason of intensive industrial legislation, this so-called "pension hysteria" has developed to a greater extent, perhaps, than in many other countries. This seems to be by reason of the German method of paying compensation, which continues during the period of disability, while other countries have a cash settlement basis. Thus, in Denmark the percentage recovering from traumatic neuroses is 93.6. In Germany it is only 9.3 per cent.

#### TRAUMATIC PSYCHOSIS.

The difficulty in assigning to trauma the leading or only role in the causation of any form of insanity is obvious. There are so many other factors concerned, e. g., alcoholism, syphilis, arteriosclerosis, epilepsy, and the inheritance of insanity. We are also confronted again with the fact that a true traumatic psychosis may occur very late after the injury. Pierce Bailey concludes from an analysis of the State Hospital statistics of New York, that trauma is an actual cause in less than one per cent. He bases this conclusion from the small percentage of instances of fracture of the skull in the histories of these asylum patients. However, there is, none the less, a true form of traumatic insanity of favorable prognosis in most instances, but of very uncertain duration. Its symptomatology is fairly definite and sets off the disorder from other more chronic forms of insanity as well as from other temporary forms.

Adolph Meyer has made the most complete study of this disorder on record, both from the literature and from personal observation of cases. He recognizes a true primary traumatic psychosis following definite head injury, and characterized in most cases by "a protracted delirium, partial disorientation, i. e., variations between clearness and haziness of the sensorium, a certain prominence of fabrications of dream-like situations, further difficulty of ready remembrance and calculation."

His cases are minutely described and analyzed. The main facts to be emphasized from an analysis of these cases and from other similarly studied are the following:

1. That the lesions are usually gross and productive of secondary degenerative changes, the latter being enhanced probably by the nutritional disturbance due to oedema.
2. That fracture of the skull or other external signs are infrequent.
3. That subsequent tumor formation, especially bony spurs of the endocranium, resulting from organized clot, may be the cause of continued symptoms after those typical of primary traumatic psychosis have disappeared.
4. That recovery from the psychosis, other things being equal, can be confidently predicted and the duration is usually about two months.
5. That "after effects" appear in many cases, characterized by marked irritability, forgetfulness and very distressing sensations in the head of a burning, creeping character or ordinary severe headache and dizziness aggravated by alcohol, to-



bacco, emotion or posture (vaso-motor instability). Also by slowness of thought, easy fatigue and inability to keep impressions. These symptoms disappear in time, but may last a year or more. If they do not disappear there are other complications, e. g., arteriosclerosis, not directly due to the trauma.

It is because of these comparatively mild after effects that such patients are often thought to be malingering. But the symptoms are so uniform and are demonstrated so consistently that a little observation of the patient under ordinary circumstances should soon decide this point. Such patients are reluctant to take part in any social activity; feel better when left alone; are incapable of sustained work or play and show a very pronounced irritability and also a marked degree of "absentmindedness," i. e., they easily forget instructions, messages or names, a disorder of attention being largely responsible for these "memory" defects. However, it is in these cases that one needs to be on guard against failing to distinguish a beginning general paresis so that in all such instances a lumbar puncture is warranted.

#### References:

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 Lloyd & Deaver: "A case of focal epilepsy." *Amer. Journal Medical Sciences*, 1888.  
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### A REVIEW OF SOME OF THE LATER DEVELOPMENTS ALONG IMMUNOLOGICAL LINES \*

By R. A. ARCHIBALD, D. V. S., Oakland.

In reviewing recent literature we are impressed with the fact that we are entering a new era in the study and treatment of infectious diseases.

When the vaccine therapy was first introduced by Wright and his co-workers we were quite enthusiastic, forming at that time strong opinions on specificity and believing that all infectious diseases should be treated solely upon a specific basis. Later studies, however, and taking into consideration the work of Abderhalden, Ehrlich, Vaughan, Jobling, Petersen and others our opinions as to specificity have undergone decided modifications, so that even though we still believe specificity must be observed in following out vaccine therapy in the treatment of infectious diseases, we do not believe that specific treatment is the sole or even the main factor.

A review of some of the later developments along immunological lines shows that of all the numerous elements which enter into the physio-biological system of balanced reactions the most interesting from a physiological and pathological standpoint is the relationship existing between the proteolytic serum ferments on the one hand and the serum anti-ferments on the other. Unquestionably the increase or decrease of these elements has a vital influence upon normal metabolism.

It appears to be a well established fact that under normal conditions there is, and must of

necessity be, a balanced relationship between these elements, and that any condition that interferes with this relationship will upset the normal metabolic order of things and pathological changes due to functional deviation will inevitably be the result. If this be true, and there seems to be ample justification for this belief, then the big problem confronting the medical world today is how to control or maintain this normal balance between the ferments and the anti-ferments by increasing or decreasing either one as occasion requires.

It was formerly thought, that following the parenteral introduction of a bacterin or so-called vaccine, specific bactericidal or bacteriolytic substances were produced, whose function it was to attack the homologous invading bacteria, destroying them by the process known as lysis. As a result of this lytic action toxic end products became available and these toxic end products being specific, that is having a combining affinity for highly specialized cellular elements designated by Ehrlich as cell or fixed receptors, become anchored to the cells, through the media of these receptors causing injury to the cells, which injury may be partial or complete, depending upon the amount of toxin available and the amount so anchored. If cells so attacked are not injured to the point of destruction they may undergo regeneration and during the process of such regeneration the cells provide against injury in the future from similar attacks. This protection is accorded by the formation of cell receptors or toxic combining elements in excess of the capacity of the cells. As a consequence this surplus is secreted or excreted into the surrounding body fluids becoming free receptors or anti-toxins whose mission it is to combine with the specific toxic elements before they have the opportunity of coming in contact with the cells. It was supposed in this way specific immunity became established.

However, it is now a well-recognized fact admitted even by Wright and his co-workers, that the therapeutic or immunological results, following the parenteral injection of bacteria, are not explained wholly on a specific basis as certain facts indicate that non-specific benefits result from bacteriotherapy. The possibility that the explanation for this effect is to be sought in the mobilization of non-specific ferments must be taken into consideration.

While the introduction of bacteria parenterally does, beyond question, stimulate the production of specific bacteriolytic substances and incidentally specific anti-toxic bodies, they do not apparently stimulate the production of specific proteolytic substances. It would seem logical in the light of recent developments and knowledge that as a result of bacteriolytic action upon the bacteria, substances of an-anti-tryptic character become available. These substances possess the property of inhibiting anti-ferments, thus removing all opposition to the normal ferments, permitting autolysis to take place and the consequent liberation of toxic end products which represent the result of cleavage of the individual's own protein elements.

In this connection we must bear in mind that

\* Read at a meeting of the Alameda County Medical Association, September 19, 1916.

the splitting of any protein substance, whether it be a foreign protein that has gained access to the body proper accidentally, or autolysis or cleavage of native protein, gives rise to end products which are toxic in character and have a profound effect upon the functional activity of body cells.

Recent discoveries indicate that our former belief that bacteriolysis and proteolysis were synonymous terms was not well founded. Specifically speaking, these terms refer to or should refer to entirely different phenomena.

Bacteria that gain entrance accidentally into the body proper, or when introduced parenterally for immunological purposes, undergo specific changes of a bacteriolytic nature, changes that are now believed not to be true fermentation, but purely physical in character. Following this lytic action their protein content are rendered available, and undergo proteolysis which is considered to be a true fermentative process non-specific in character.

In addition certain elements, probably lipoidal in character, are liberated by reason of the change in the physical character of the bacteria and these lipoids have been proved to possess anti-tryptic characteristics. Hence, as a result of the bacteriolysis we have, first, the proteolysis of the bacterial proteins and, second, proteolysis of the individual's own proteins either of the blood or the tissues.

Jobling, Petersen and other workers have shown, as a result of their investigations, that in the case of the tubercle bacillus the lipoids which are prominent constituents of that organism have the power of completely inhibiting tryptic digestion, accounting for the lack of autolysis which is such an important factor in that disease. When, however, such lipoids are saturated with iodine their inhibitory effect is lost, the normal ferments become active, autolysis results and there is a breaking down of the tuberculous lesion.

For the purpose of emphasizing this point it might be said that we can remember when it was frequently the custom on the part of physicians in making a diagnosis of tuberculosis, to obtain specimens of sputum after the administration of a few doses of iodides. Iodine compounds were supposed to act as a sort of expectorant. In many cases the administration of iodides would cause the bacillus of tuberculosis to appear in the sputum. The reason for this may be explained by saying that the iodine combines with the anti-tryptic elements, the unsaturated lipoidal substances which are prominent constituents of the tubercle bacillus, thus inhibiting anti-ferments and allowing ferments to become more active, permitting cleavage or lysis of the tuberculous lesion and the liberation of tubercle bacillus from the tissues. In fact, many instances are on record where the administration of iodine in tuberculosis has caused rather severe hemorrhages and the conversion of latent tuberculosis into a progressive type, so it is apparent that iodine is not a good drug to use in tuberculosis. We are simply using iodine as an illustration to bring out a few points we desire to make plain. Iodine is frequently used in cases of syphilis

where it is believed to have an absorbent action in the treatment of this and various other pathological proliferations. In the case of syphilis it has no direct effect upon the causative organisms of syphilis. Using our knowledge of ferments and anti-ferments in this connection we now believe that iodine simply brings about resolution or dissolution of the luetic lesion exposing the spirocheta pallida to the action of arsenic and mercury which are subsequently administered.

The study of the phenomena of anaphylaxis, particularly as to the source of the toxic substances which are responsible for the shock or reaction, has thrown much light on these problems. The question to be decided in this connection is the source of the toxin, the antigen, or heterologous protein, do these split products originate from the digestion of the individual's own serum or tissues; or is it not possible that both sources may be involved in the process?

Up to within a few months ago we believed anaphylactic shocks were entirely due to the introduction of heterologous sera. That is, in producing an allergic condition in an animal it was necessary to introduce the serum of another species of animal. For instance, take the blood serum of a horse and inject it into a guinea pig to-day, and then give another dose of horse serum in fifteen or twenty days, the second dose will kill the pig as quickly as a lethal dose of strychnine. We have proved in the last few months, however, that you can take guinea pig's blood and introduce it into another guinea pig and kill it just as though you had injected strychnine. In other words, we have been able to extract anti-ferment from guinea pig's serum, introduce such extracted serum into other guinea pigs, causing death of same.

The later hypothesis is probably correct, as the work of Bordet, Friedberger, Vaughan, and others show that the toxic split products of autogenous proteins and heterologous varieties, while both may be active at the same time, they are not identical, and further, the toxic end products of heterologous proteins are not true anaphylatoxins. That this last statement is probably true is evidenced by the fact that apparently the amount of heterologous protein sufficient to produce an anaphylactic shock in a sensitized animal does not contain in itself end products sufficient in quantity to directly produce the toxic manifestations characteristic of such reaction.

The explanation of the reason for this assumption is further based upon the fact that the ferment action of a serum is held in abeyance normally by the anti-ferments which are known to be unsaturated, lipoidal, anti-tryptic substances, the removal of which by lipoidal solvents removes the opposition to the action of the normal ferments, permitting autolysis of the serum proteins, and liberating toxic end products. These toxic end products are probably identical with the toxic end products that were formerly thought to be due to the cleavage of foreign proteins such as bacteria and other heterologous antigens.

In the study of the source of toxic substances

and their influence upon disease in general we must, in view of the above statements, consider that we are dealing with a multiplicity of protein substances, not only those representing the invading pathogenic organism, but also the individual's body cells both normal and proliferative (the result of pathological changes), which undergo autolysis yielding as the result of such lytic action end products that are toxic in character.

Applying these principles in a practical way we are taught that the clinical manifestations of a disease indicate the kind of cells, tissues, or organs involved undergoing injury or pathological changes, and by reason of the selective action of the toxic substance producing the injury, we are frequently able to definitely designate and point out the source of the toxic element. In studying the clinical manifestations of diseases, however, we are confronted with the fact that many of our clinical symptoms are common to a great many different types of infection and toxemias which simply goes to show that while we must work out the specific character of a disease, at the same time we must not overlook other factors that are equally if not more important. The point we particularly desire to emphasize is that we must abandon the idea that the toxin or toxins of a causative organism are solely responsible for the pathological changes brought about during the progress of an infectious disease.

In many of our infectious diseases, especially those characterized by productive changes, that is by cellular proliferation, an infinite, or inconceivable number of new cells are formed and these cells grow by utilizing the elements of the blood, chiefly the big protein molecule, and in their period of active multiplication they take from the blood what they need for the purposeful end of the cell and cast back into it unused portions. If the new cells are native to the part where they are formed then the cast-off products of their activity may be normal, though it is quite possible that they are formed in such quantities in so short a space of time that the ability of the system to deal with them is over-taxed. If we assume, however, that the cells are formed under pathological conditions and are not exactly like the normal cells from which they originated, then the possible harm done in their growth by abstraction and addition is even more readily conceived.

There is, however, a more important factor to be taken into consideration, in studying the fundamental causes of the symptoms of diseases; namely, degeneration of the new formed cells. Take, for instance, tuberculosis or typhoid, which are typical productive diseases in which cellular proliferation is well marked. In the case of these diseases we have myriads of new cells, constantly undergoing degeneration and parenteral protein digestion and as a consequence are throwing into the blood products that, if not qualitatively, are at least quantitatively abnormal. It is generally be-

lieved in acute miliary tuberculosis and in fact all other forms of tuberculosis, a large share in the production of clinical manifestations must be given to the substances liberated by the living and dying pathological cells. In the case of typhoid fever when we realize that while the normal lymph glands of the mesentery are scarcely appreciable to the eye in typhoid fever they may become as large as walnuts. The spleen, which weighs normally about 200 grams, in the typhoid individual becomes several times as large. When we contemplate this enormous increase in cells must we not consider it to be on a par with or even in excess of the enormous multiplication of bacteria? These cells, as we have already pointed out, are constantly undergoing parenteral digestion which results in split proteins toxic in character and are also excreting metabolic products which must constitute an added burden upon the elements responsible for phagacytosis, proteolysis and elimination.

Pneumonia is another good illustration of a disease in which bacterial toxemia has perhaps been overemphasized to the exclusion of everything else. It would seem not at all improbable that most of the clinical manifestations of pneumonia are due to the exudate independently of the bacteria. Taking care of this exudate is a fermentative process and in as much as autolysis is an ideal example of parenteral digestion it would therefore seem that the end products, the result of this autolytic action might be and probably are responsible for many of the clinical manifestations observed in this disease. In this explanation we must, therefore, assume that the source of the toxic substances are not to be sought solely in the pneumococcus protein but that the pneumonic exudate itself consisting of an enormous amount of fibrin and leucocytic debris, a foreign mass, insofar as the lung is concerned, represents a matrix of probable toxic substances.

If time permitted we could go on and discuss many other diseases of the productive or cellular proliferating type, but the above examples will suffice to emphasize the point we are particularly desirous of bringing out at this time; namely, that the clinical symptoms of an infectious disease are not all specific in character but that they may be, and probably are, a combination of bacterial and cellular toxemias and are not a result of the specific toxin alone.

Specific treatment, therefore, to assist in the production of active immunity or the use of a specific sera to bring about passive immunity which are methods only for the neutralizing of the specific toxic elements produced by the causative organism, do not provide for the neutralization of the toxic end products, the result of parenteral digestion of the individual's own serum and tissue proteins. While we do not wish to discredit the use of specific anti-bacterial preparations in the treatment of infectious diseases we do, in view of the above statements of probable facts, claim that the use of specific treatment is not in itself sufficient.



The Committee on the Prevention of Tuberculosis of the New York State Charities Aid Association was recently successful in getting the County Tuberculosis Hospital Law amended by the 1917 Legislature, making the erection of hospitals mandatory in counties having more than 35,000 population. The amendment was put through as a war measure, so that the state will be prepared to treat cases discovered in examining recruits or found in the Army itself.

The following conclusions are drawn from the experience of Canada:

"(1) Adequate medical examination for tuberculosis of all men considered for the Army.

"(2) Sanatorium care for the early cases rejected by the medical examiners should be provided by the state; and hospital care for the moderate and advanced cases thus discovered should be provided by the local communities, cities or counties.

"(3) Soldiers invalidated because of tuberculosis should be kept under military discipline and required to go into tuberculosis hospitals for care and treatment. The institutions should be sufficiently numerous throughout the state so that the men may be placed in the hospitals that are close to the localities in which their kinsfolk reside, enabling the latter to see the men frequently, thus promoting contentment and a willingness to co-operate with the hospital authorities in pursuing the course of treatment."

## Book Reviews

**Roentgen Technic (diagnostic).** By Norman C. Prince. St. Louis: Mosby Co. 1917.

This little book may be of value to the beginner in Roentgenology in giving him a rough guide to positions and exposures. It will soon be laid on the shelf and forgotten. The procedures described soon become a matter of routine and the electrical and theoretical considerations are more or less inaccurate.

It is, on the whole, an artless, if enthusiastic contribution to Roentgen literature. H. E. R.

**Gynecology.** Edited by E. C. Dudley and S. S. Schochet. Vol. 4 of Practical Medicine series for 1917. Chicago: Yearbook Publishers. 1917. Price, \$1.35.

### Contents.

General principles. Disorders of menstruation. Ovary. Displacements and injuries. Infections and allied disorders. Malformations and tumors. Sterility.

**Pediatrics and Orthopedic Surgery.** Edited by I. A. Abt and J. Ridlon. Vol. 5 of Practical Medicine series for 1917. Chicago: Yearbook Publishers. 1917. Price, \$1.35.

### Contents.

Pediatrics. Spine. Upper extremity. Lower extremity. War orthopedics. Miscellaneous.

**Urology.—Diseases of the Urinary Organs, Diseases of the Male Genital Organs, and the Venereal Diseases.** By Edward L. Keyes, Jr. New York and London: Appleton, 1917.

A very good history of the development and progress of urology could be had by a comparative study of this new edition and its predecessors. Van Buren, E. L. Keyes, Sr., and his scholarly son, the present author, are all distinguished urologists of their respective periods.

For almost half a century innumerable revisions and new editions have kept step with the rapid advances of the science and each one has registered the knowledge of its period in a conservative but complete manner, and been recognized as the standard of its time. The growth from a hybrid and discreditable venereology to a highly technical

and creditable surgical specialty is nowhere better illustrated than by a comparison of Van Buren, Keyes' first edition, "Genito-Urinary Diseases and Syphilis," to this modern "Urology," which frankly disclaims any kin to the black plague, but requires hundreds of pages to elucidate the modern and brilliant science of renal diagnosis and treatment. The frequent association of lues with the sexual organs necessarily requires familiarity of the disease on the part of the urologist. This need is met in this edition by a short but practical summary in an appendix.

Many chapters of this nineteenth edition have been revised and rewritten in this 1917 tome. The chapters are logically and thoughtfully arranged and fully illustrated by 18 excellent plates and 214 drawings. A student of urology is impressed in reading the text by the fairness and good judgment shown in the presentation of the more recent advancements. One feels that all statements have been honestly and carefully tested in the light of actual experience. That they are, in addition, vouched for by the reputations of past masters, unless otherwise stated. The presentation carries a current personal worth as embodying the wide clinical experience of a born urologist of high scientific attainments in the fundamentals of medicine and surgery.

This new edition forms an ideal text-book for the medical student, a practical and valuable reference for the busy practitioners, or alien specialist, and a gratifying and wholesome stimulus to the urologist. F. H.

**Syphilis and the Nervous System.** By Max Nonne. Authorized translation from the second revised and enlarged German edition by Chas. R. Ball. Second American edition revised. Philadelphia and London: J. B. Lippincott Company. 1916. Price, \$4.00.

A thoroughly good and comprehensive book written, as the author states, "out of the practice for the practice." The numerous illustrations deal mainly with the pathology of the subject and are satisfactory. Many case histories are cited from Nonne's wards at Eppendorf, Hamburg, and from the French and English literature.

Full recognition is given to the important work of Noguchi in demonstrating the spirochaetae in the metasyphilitic diseases. And since, in these latter diseases, the role of syphilis as a cause is no longer to be doubted, much of the discussion as to the etiology of both tabes and paresis could be advantageously eliminated. To this phase, however, much historic interest attaches. A spirochaetal toxin acting in a selective way on the nervous tracts (after the manner of diphtheria toxin) is the view still expressed as explaining much of the pathology of paresis and tabes.

The chapter on the modern laboratory study of the blood and cerebro-spinal fluid is of particular and timely interest. The laboratory conclusions have been critically checked up by clinical and pathological findings. In this chapter the technique of the four reactions, Wassermann in the blood, Wassermann, leucocytes and albuminous bodies in the cerebro-spinal fluid are minutely described. A chapter on salvarsan therapy has been added. The author shows no great enthusiasm as to the value of the newer arsenic bodies in nerve syphilis. He uses them, however, as they are commonly used in conjunction with mercury and the iodides.

The value of energetic treatment of the older sort in the early stages of syphilis as a means of preventing subsequent involvement of the central nervous system, is still questioned by numerous authorities, the author included. And it is still too soon to know whether the use of the newer diagnostic and therapeutic agents will influence this most important problem of late syphilis and metasyphilis. H. H.

**Cancer—Its Cause and Treatment.** By L. Duncan Bulkley, A. M., M. D., Senior Physician to the New York Skin and Cancer Hospital. Vol. 2. Published by Paul B. Hoeber, 1917, New York. Price, \$1.50.

This book is a continuation of a previous book on cancer by the same author, and is a series of lectures given to the Wednesday afternoon clinic at the New York Skin and Cancer Hospital.

Dr. Bulkley's belief differs greatly from the accepted ideas on the subject, as he does not consider operation necessary or advisable. His cures consist mainly of a diet, published for the first time in this book. Meat, milk, and eggs, the principal proteid foods, are entirely avoided. The diet is absolutely vegetarian, excluding also coffee, chocolate, cocoa, and all alcoholic drinks. Cereals cooked for hours and served with butter and salt, is one of the principal items in the diet list, made out in detail for one week.

Some medical treatment (not specific in any way) accompanies the diet and with hygienic measures, he cites cases cured without operation, and claims if the proper treatment continues, cancer cannot redevelop. This does not apply to recurrent and inoperable cancer. He asserts that the total number of cures in reasonable cases to be far greater under his line of treatment than under that most commonly employed. E. H. W.

**Modern Milk Problem in Sanitation, Economics and Agriculture.** By J. Scott MacNutt, lecturer on Public Health Service in the Massachusetts Institute of Technology. New York: Macmillan Co. 1917. Price, \$2.00.

The author covers the progress of the last 21 years toward clean milk. The elimination of the use of preservatives and addition of water for commercial purposes is the first step in the progress. The standard set in 1896 by the first Medical Milk Commission of Newark, New Jersey, is the second step. Clean milk (under 10,000 bacteria to the cc.) from healthy cows (non-reactors to the subcutaneous tuberculin test) and a constant supervised production has been certified to the public by the medical profession. Mr. MacNutt gives credit for the stimulus certified milk has been to the clean milk movement, but feels sure that inspection under regular departments of health will supersede the volunteer work of medical milk commissions in course of time.

**All the milk for all the people must be standardized as healthy food.**

The use of score cards is the third step toward clean milk. The author advocates the use of a modified score card (North card) emphasizing essentials for clean milk, milking, cooling and sterilizing of utensils, giving 90 per cent. of the score to these three points. He advocates dairy inspection in addition to pasteurization, the latter to be preferably in the container in which the milk is delivered, and supervised by the department of health.

Grades of healthy milk should be only (1) raw milk from tuberculin tested cows (certified, guaranteed or Grade A raw); (2) Grade A pasteurized. Milk so poor that Grade B is necessary will rapidly diminish under modern milk inspection.

The book is modern and timely and encourages municipalities to put \$200 to \$500 into equipment in milk laboratories to enable them to control farm conditions. Palo Alto, California, for its universal tuberculin test and active milk inspection, and Riverside, California, for its co-operative pasteurization and distribution of milk from a plant owned by the dairymen, come in for favorable comment. The book is suggestive and helpful throughout and a real contribution in the solution of the milk problem. A. B.

## State Society

### IMPORTANT NOTICE—INDEMNITY DEFENSE FUND.

Notes are now becoming due.  
Do not let your membership lapse.  
Each member will be informed ten days in advance of the due date of his note.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

### STATE DUES FOR 1918.

In order to defray the increased expenses of the Society due to its wider activities, and in response to the recommendations of the Council, the House of Delegates fixed the assessment for 1918 at \$7.00, being an increase of \$1.00 over the dues of last year.

At the last meeting of the Council of the Medical Society of the State of California, held August 25th, the question of members in service being exempted from paying dues, was raised. Several communications from the component societies were read and discussed dealing with the question—it is a question—whether or not members out of the State on military duty should have their dues paid by the County Society, or by some other method. This matter is now under advisement.

### CRIPPLED CHILDREN.

"A general survey of the crippled children of the State of California is in contemplation. Will you kindly assist by answering the following questions, and sending your answers to Dr. Saxton Pope, secretary of the State Medical Society, Butler Bldg., San Francisco:

"How many cases of crippled children are at present under your observation? State ages.

"What are the forms of disability?

"What are the nationalities?

This is a humanitarian project and merits your giving it a few minutes of your time. A number of these cripples if given a proper education would be able to earn their own living and thus avoid becoming charges on the community."

The above request has been sent to the secretary of each county society by Dr. J. Henry Barbat, president of the State Society, with the intention of having it brought to the attention of each member individually.

In a recent letter from Camp Lewis, Base Hospital, Washington, one of our California surgeons writes as follows:

"The examining physicians of the exemption boards are passing the worst lot of cripples ever seen. It looks, here, as if they have combed the

country for the bad ones, and California is the worst offender among them.

"There is no excuse for them and it causes us to reject ten per cent. of the conscripts sent. This percentage is rising steadily. Some of the men were not even stripped during the examination or such mistakes could not be made. One man took off a false foot when told to remove his clothes, here. Another had such a scar in the palm of his hand that he could not open it far enough to grasp a twenty-dollar gold piece offered him as a present.

"The surgeon in charge of these examinations here tells me that he is ashamed of our State. The enlistment of these defectives who, later, are thrown out in the cantonments, is an enormous Governmental expense. He figured that the lowest possible estimation, that of the 30,000 conscripts, such percentage will have to be returned that it will cost the Government \$150,000. These rejections would not include such things as hernia, varicocele, and minor defects which we can repair, but those which can not be remedied, and which should have been discovered prior to enlistment. All this is a discredit to our examining boards and a shame to the State.

"Being in the Army, I do not wish to be quoted.

"Major.....M. R. C."

October 7, 1917.

#### MINIMUM WAGE LAW OUTLINED.

To Whom It May Concern:

Take Notice: That pursuant to and by virtue of the authority vested in it by the Statutes of California, 1913, Chapter 324, and amendments thereto, and after public hearing duly had in the City and County of San Francisco, on Friday, June 15, 1917, the Industrial Welfare Commission of the State of California does hereby order that:

1. No person, firm or corporation shall employ, or suffer or permit an experienced woman to be employed in the mercantile industry in California at a rate of wages less than \$10.00 per week (\$43.33 per month).

2. The wages of learners may be less than the minimum rate prescribed for experienced workers provided:

(a) That learners entering employment under 18 years of age be paid an initial weekly wage of not less than \$6.00 per week (\$26.00 per month) for the first six months of employment; for the second six months not less than \$6.50 per week (\$28.17 per month); for the third six months not less than \$7.00 per week (\$30.33 per month), and for the fourth six months not less than \$7.50 per week (\$32.50 per month), and for the fifth six months, or when 18 years of age not less than \$8.00 per week (\$34.67 per month).

(b) That learners entering employment 18 years of age, and under 20 years of age be paid an initial weekly wage of not less than \$8.00 per week (\$34.67 per month) for the first six months of employment; not less than \$8.50 per week (\$36.83 per month) for the second six months; not less than \$9.00 per week (\$39.00 per month) for the third six months; not less than \$9.50 per week (\$41.17 per month) for the fourth six months, and thereafter shall be deemed experienced workers and shall be paid not less than the minimum rate for experienced workers.

(c) That learners entering employment 20 years of age or over be paid an initial weekly wage of not less than \$8.00 per week (\$34.67 per month) for the first six months of employment; for the second six months not less than \$8.50 per week (\$36.83 per month); for the third six months not less than \$9.00 per week (\$39.00 per month), and thereafter shall be deemed experienced workers

and shall be paid not less than the minimum rate for experienced workers.

3. The total number of adult and minor learners in any establishment shall not exceed 25 per cent. of the total number of women and minors employed. In computing the total number of women and minors, "temporary" and "special" workers shall not be included.

4. Where payment of wages is made upon a commission or bonus system, wages shall be computed weekly and the same wage, plus the bonus or commission, shall be not less than the minimum rate for the wage group in which the worker belongs.

5. All adult "special" women employees shall be paid not less than \$1.67 per day. All minor "special" employees shall be paid not less than \$1.25 per day.

6. All "part-time" workers, except waitresses,\* shall be paid not less than the minimum rate for an eight-hour day.

(a) Students attending accredited vocational, continuation or cooperative schools may be employed at part-time work on Special Permits from the Commission, and at special rates to be determined by the Commission.

7. No person, firm or corporation shall employ or suffer or permit a woman or minor to work in the mercantile industry more than eight hours in any one day or more than forty-eight hours in any week.

8. All women and minors now employed in the mercantile industry must be rated and paid in accordance with their experience and age as in the above-mentioned regulations.

9. A license may be issued by the Commission to a woman physically disabled by age or otherwise authorizing the employment of such licensee for a wage less than the legal minimum wage; and the Commission shall fix a special minimum for such a woman.

10. The Commission shall exercise exclusive jurisdiction over all questions arising as to the administration and interpretation of these orders.

A "temporary" worker is a person employed during the holidays for a period not to exceed four (4) weeks.

A "special" worker is one who works less than six (6) days a week.

A "part-time" worker is one who works less than eight (8) hours per day.

A "learner" is a woman or minor who (1) is employed in learning the mercantile industry by an employer who provides the learner with reasonable facilities for such learning; and (2) has received a certificate or has been registered as a learner by the Commission.

Provided that an employer may employ a learner for a period not to exceed one week pending application to the Commission for a certificate and registration of such learner.

This order shall become effective sixty (60) days from the date hereof.

Dated at San Francisco, July 6, 1917. Attest: Katherine Philips Edson, Executive Officer.

Industrial Welfare Commission, State of California. Frank J. Murasky, Chairman, Katherine Philips Edson, A. B. C. Dohrmann, Walter G. Mathewson, Alexander Goldstein.

"Every employer or other person who, either individually or as an officer, agent or employee of a corporation, or other persons, violates or refuses or neglects to comply with the provisions of this act, or any orders or rulings of this Com-

\* Special minimum rates for "part-time" work waitresses will be determined when the orders are made in the hotel and restaurant industry.



mission, shall be guilty of a misdemeanor, and upon conviction thereof be punished by a fine of not less than fifty dollars, or by imprisonment for not less than thirty days or by both such fine and imprisonment."

"For the purpose of this act, a minor is defined to be a person of either sex under the age of eighteen years."

Note.—Any firm wishing to employ either minor or adult learners must send to the Industrial Welfare Commission, where they will receive blank applications.

## County Societies

### ALAMEDA COUNTY.

Dr. Ernest H. Pape, of 1720 Oxford street, son of George C. Pape, who enlisted some time ago in the Medical Reserve Corps, has received his commission as first lieutenant in the medical service of the United States Army. Dr. Pape has offices in the First National Bank Building and is the county physician of Berkeley, Albany and Piedmont. He is awaiting orders to take up his work.

At the meeting of the Alameda County Medical Association, which was held October 1, 1917, at the Hotel Oakland, Oakland, the program was as follows:

1. Injuries to the Peripheral Nerves. Dr. Leo Eloesser, San Francisco.
2. Bismuth-Iodoform Treatment of Recent Wounds. Dr. M. L. Emerson.
3. Hydropathy. Dr. M. S. Kimbul.

### AMADOR COUNTY.

Dr. Geo. H. Sciaroni, of Sutter Creek, has been summoned to report for military duty, and expects to be located near San Diego for the present. Dr. Sciaroni graduated from a medical college in Little Rock, Arkansas, about two years ago, since which time he has been practising in Sutter Creek.

### KERN COUNTY.

A general call was made by Drs. H. H. Sherk and Stanley P. Black, Health Officers of Pasadena, through the Kern County Medical Society, to the medical profession of Kern County, to give them first-hand information relative to Medical Preparedness, Medical Officers' Reserve Corps, etc., this being one of their week-end trips to appear before meetings of the medical profession in the southern part of the state.

Drs. Sherk and Black arrived by machine from Pasadena at 8 p. m. September 14th, and after a hurried lunch were taken to the office of City Health Officer Dr. J. P. Cuneo, where they met some thirty members of the medical profession of Kern County. One, Dr. Wm. B. Smith of Kernville, had traveled 65 miles to attend the call, returning again that night. Also Dr. Katherine Ellis was patriotic enough to attend.

In the absence of Dr. F. J. Gundry, president of the society, now in the east doing post-graduate work, and Dr. J. A. Copeland, vice-president, of McFarland, whose professional duties detained him, the secretary opened the meeting at 8:30, introducing Dr. H. H. Sherk, who gave a clear outline of what had been done and what was expected to be done to assist the United States. He also requested that this society use every effort to see that the U. S. Senators were enlightened on the necessity of supporting the Owen amendment to the Senate Bill No. 1786, increasing the rank of the Medical Officers to a corresponding rank with Medical Officers in the Allied armies.

It was moved, seconded and carried unanimously that the secretary communicate with U. S. Senators, calling their attention to this amendment, and also urge the State Society officials

to take up this matter at once with the civic and official bodies of Kern County to the same end.

A committee consisting of Dr. S. T. Smith, past president; Dr. Geo. Buchner, past president and member of Board of Censors, and Dr. G. C. Sabichi, were appointed to take up the matter.

Dr. Black was then introduced and impressed the meeting with the necessity of informing the Government at the earliest possible moment that they were ready to go, unless physically disqualified for service.

Dr. Gayle Moseley was then introduced, he being a member of the District Exemption Board now in session. He threw some lights and shadows on being a member of a District Exemption Board, and requested the profession to be very careful and very definite in certificates given to recruits asking for exemption.

Dr. W. H. Cook, late major, spoke very interestingly on the actual experience of one with twelve years' service, both as a line and medical officer, and expressed keen regret that he was not now in active service.

It was noted that Kern County had already supplied to the service as captain, Dr. C. W. Kellogg, as lieutenants, Drs. Marshall, McLain, Blood and Bumgarner.

A vote of thanks was extended to Drs. Sherk and Black, who returned to Pasadena that night; also to Dr. Moseley for his interesting and helpful talk. The meeting adjourned, voting that it was a very successful meeting.

C. A. MORRIS, Secretary.

### LOS ANGELES COUNTY.

In response to urgent cable requests from the American Red Cross commission to France, a third detachment of child-welfare doctors and nurses will be sent to France. Included in the party is Dr. Helen H. Woodroffe, of Ocean Park, Cal.

### Dr. H. Bert. Ellis a Trustee of the A. M. A.

At the last meeting of the American Medical Association, Dr. H. Bert. Ellis of Los Angeles was honored by being elected a member of the Board of Trustees of the A. M. A.

This Board has in its keeping the enormous professional and financial interests of the A. M. A. and a trusteeship is one of the very highest honors in the gift of the Association.

This election is a distinct recognition of the many years of faithful work by Dr. Ellis in behalf of organized medicine.

### MENDOCINO COUNTY.

Sept. 18, 1917.

My Dear Doctor:

How is it that none of you take the trouble to write and keep your secretary posted on happenings—medical—in your locality? How am I to know if no one keeps me posted? Besides, the editor of the State Journal, in his comments, tells you to go after your county editor. Please do, then we will get some interest in the game. If nothing else will stir you, the anticipation of seeing your secretary editor getting it "in the neck" ought to bring both letters and attendance.

Fraternally yours,

OSWALD H. BECKMAN,

Secretary and County Associate Editor for the Mendocino County Medical Society.

Dear Doctor:

If my letters some scolding do  
They were meant to benefit you.  
If I from you some news expect  
And write to you to that effect,  
You should at once help do your part.  
Send me the news, do make a start.  
And if the news from you be none,  
Please write a note to me for fun.

Fraternally,

Your Sec., Editor, O. H. B.

**MONTEREY COUNTY.**

Dr. W. R. Reeves, a member of this society, has enlisted in the M. R. C.

**NEVADA COUNTY.**

Dr. Paul Barnes, who has been practicing as a physician and surgeon in Grass Valley for several years, yesterday closed his offices and is closing up his business affairs so as to be ready to join the Medical Reserve Corps, in which he recently enlisted.

**PLUMAS COUNTY.**

Dr. Frank M. Whiting of Quincy has received his commission as First Lieutenant in the Medical Section of the Officers' Reserve Corps.

**SAN BERNARDINO COUNTY.**

The first meeting after the summer of the San Bernardino County Medical Society was held at San Bernardino, Tuesday evening, October 2, 1917. After the banquet the annual election of officers took place, which resulted in the following being elected for the coming year:

President, G. G. Moseley, Redlands; first vice-president, N. H. Stiles, San Bernardino; second vice-president, J. A. Champion, Colton; secretary and treasurer, C. L. Curtiss, Redlands; delegates to the meeting of the State Society, D. C. Strong, San Bernardino; G. G. Moseley, Redlands. Alternates, W. W. Savage, San Bernardino; C. L. Curtiss, Redlands.

The new County Hospital is just completed and the evening was given over to a discussion of the County Society furnishing an attending and consulting staff to the hospital. The report of the Hospital Committee on the subject recommending that the County Society undertake this work was adopted.

**SAN DIEGO COUNTY.**

San Diego is doing her bit. Over thirty of the local profession have either gone into service or are awaiting assignment.

Dr. A. E. Banks recently resigned his position as City Health Officer to accept a captain's commission in the Army. Dr. W. W. Crawford has been appointed to succeed Dr. Banks in the Health Office.

The County Supervisors have the plans drawn and the money available to proceed at once with the erection of an administration building and two wings to accommodate about sixty tuberculous patients. Plans are so arranged that the buildings may be added to as the needs demand.

The first regular meeting of the County Medical Society in September took the form of a clinical evening in charge of the surgical staff at the County Hospital, where interesting cases were presented and discussed by Drs. Newman, Burger, Courtenay, O'Neill and Fox.

The second meeting in September featured an illustrated lecture on "Radium in Gynecology," by Dr. Rex Duncan of Los Angeles.

On October 9th, in the society rooms, Dr. H. B. Wilson discussed the question of "Scurvy in Infancy," including an interesting case report.

The local society has a committee working hard upon the problem of conserving the practices and aiding the families of the doctors who go into service.

The San Diego Diagnostic Group Clinic broke all previous records for cases discussed during the

month of September. The long waiting list of applicants precludes any possibility of a shortage of clinical material in the near future.

Drs. H. P. Newman, T. O. Burger and F. A. Burton went East in October to attend the Clinical Congress of Surgeons of North America.

**SAN FRANCISCO COUNTY.****Proceedings.**

During the month of September, 1917, the following meetings were held:

**Tuesday, September 4—Section on Medicine.**

1. Remarks on spontaneous pneumothorax; demonstration of a case. Philip H. Pierson.
2. The Wassermann reaction compared with other clinical procedures. E. V. Knapp.

**Tuesday, September 11—General Meeting.**

1. Insanity from the public institution's standpoint. Robert L. Richards, State Hospital, Mendocino County.
2. Insanity from the general practitioner's standpoint. Philip King Brown.

**Tuesday, September 18—Section on Surgery.****St. Luke's Hospital Clinical Evening.**

1. Two cases of Volkman ischemic contracture of muscles of the forearm: one cured and one in process of treatment. L. Eloesser.
2. The medical routine of a general military hospital and its diagnostic value. J. Wilson Shields.
3. Essential points in hospital administration. W. R. Dorr.
4. A simple method for localizing foreign bodies in the eye. Kaspar Pischel.
5. A new method of treating proclivita. F. B. Carpenter.

**Tuesday, September 25—Section on Eye, Ear, Nose and Throat.**

1. The etiology and symptomatology of chronic suppurative otitis. Adolph Baer.
2. The pathological condition of the mastoid in chronic suppurative otitis; with X-ray plates. H. B. Graham.
3. Indications for the radical mastoid operation. Cullen F. Welty.

Dr. Howard C. Naffziger has enlisted in the Medical Corps of the United States Army and has been ordered to special brain surgery work. Dr. Naffziger is to report at Greenville, South Carolina, on October 1st, from where he will go with the troops from the United States to France.

Dr. Louis D. Roncovieri, son of Superintendent of Schools Alfred Roncovieri, has received notice from the Government that he would be commissioned a first lieutenant in the Medical Corps. Dr. Roncovieri will go to France with the San Francisco Base Hospital unit.

The San Francisco Hospital Red Cross Army Base Hospital No. 47 needs nurses. The professional staff of 24 doctors, the civilian staff of 6, the administrative staff of 153, and the chaplain have all been enrolled. It is necessary that the nursing personnel of 65 be completed before the unit can be certified to the surgeon-general as ready for active service. Nurses should write at once to Miss Elizabeth Jamieson, Chief Nurse, Base Hospital No. 47, Cottage Hospital, Santa Barbara; state age, place of graduation, whether registered, and whether steps have been taken to enroll or whether applicant is already a member of the American Red Cross.

**SAN JOAQUIN COUNTY.**

The regular monthly meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce quarters on Friday evening, September 28th, President C. R. Harry in the chair. Those present were: Drs. C. R. Harry, J. V. Craviotto, F. P. Clark, W. W. Fitzgerald, R. B. Knight, B. J. Powell, C. D. Holliger, C. F. English, H. E. Sanderson, J. D. Dameron, L. Dozier, B. F. Walker, Margaret Smyth, J. T. Davison, F. Conzelmann and D. R. Powell with Drs. McClish and Mason of Stockton, and Dr. Richard Harvey of San Francisco as guests.

At the conclusion of the committee reports, the chairman introduced Dr. Richard Harvey of the University of California staff who gave a very able paper on the "Treatment of Syphilis of the Nervous System." He particularly emphasized the necessity of careful laboratory routine not only of the blood but of the spinal fluid. However he recognized the necessity of being governed by the clinical symptoms as well as the laboratory data. The discussion was joined in freely by the members from the state hospital and Drs. Fitzgerald and Dozier of the staff of Clark's Sanatorium. Dr. Harvey answered numerous questions and closed the discussion, whereupon the meeting adjourned.

DEWEY R. POWELL, Secretary.

**SANTA BARBARA COUNTY.**

Dr. C. C. Park, well known in Santa Barbara, and head of the Associated Charities, has departed for France, where it is his intention to found a hospital for convalescents from the battlefields of Europe. Within a few days his wife and daughter, who are still in Santa Barbara, will follow him to France.

Two sons of Dr. Park are now in the American Army, one of them being in training at Tanforan, and the other being at Camp Lewis.

Dr. Philip S. Chancellor, having received a major's commission, left Santa Barbara on the evening of the 13th for Camp Kearney, Linda Vista, California, near San Diego, where he will be in charge of the medical side of the hospital at that camp. Major Chancellor leaves a host of warm and well-wishing friends, both in and out of the medical fraternity in Santa Barbara, and his success at Camp Kearney is a foregone conclusion.

Dr. Harold Sidebotham has received a commission as captain and expects to leave for the front with the San Francisco Hospital Unit No. 47.

Dr. William H. Campbell, who is in charge of the examining of recruits for Santa Barbara County, reports that to obtain the quota for Santa Barbara County, which is something over 400, over 2000 recruits will have to be examined, something like 1600 having already been passed upon.

Work is already started for the new County Hospital, four and one-half miles north of Santa Barbara on the State Highway. The building will cost \$45,000. It will be as strictly modern as the county knows how to make it. The architectural plans will undoubtedly make it a place of beauty, and it is so arranged that new units can be added without detracting from its attractiveness as a structure.

**SOLANO COUNTY.**

Dr. E. A. Peterson left Vallejo on September 20th for Camp Lewis, American Lake. The doctor was commissioned a lieutenant in the Medical Reserve Corps, and is the first of the Solano County physicians to answer the call to the colors. Several have volunteered and are waiting orders.

**SONOMA COUNTY.**

The Sonoma County Medical Society has furnished six doctors for the army. Drs. Temple and Herrick of Santa Rosa and Dr. Wilson of Sebastopol are on active duty, while Drs. O'Brien and Peoples of Petaluma and Dr. Butler of Eldridge are awaiting orders.

The president, Dr. Marion B. McAuley of Petaluma, offered her services, but as yet the Army has no place for women. It does seem that women could do most efficient work in the hospitals.

At the September meeting Dr. W. F. Cheney of San Francisco addressed the society on Diagnosis of Chronic Appendicitis. The October meeting will consist of a Symposium on Heart Diseases, with a clinic.

Dr. Elizabeth M. Yates was elected county associate editor.

**VENTURA COUNTY.**

At the monthly meeting of the Ventura County Medical Society held at Ventura, October 3rd, the enclosed resolutions were adopted.

Resolutions adopted by the Ventura County Medical Society for the protection and retention of the practices of those physicians who have volunteered their services at the battle fronts.

Whereas, Several physicians, members of the Ventura County Medical Society and of high standing and attainments in their profession, have answered the urgent call of patriotism by volunteering their skill and labor as military surgeons to serve suffering humanity upon the battlefields of France and elsewhere; and

Whereas, Such service will inevitably subject them to sacrifices, hardship and bodily dangers, and also entail great financial loss through interruption of well established medical practices at home; therefore, be it

Resolved, That this Society desires to impress these physicians with its deep appreciation of their patriotism, their unselfishness and, devotion to suffering humanity. That because of the heavy obligations we shall owe them we herewith pledge to them during their absence every protection and service to their families, both in health and in sickness, that we may be able to extend.

Resolved, That in every honorable way we will endeavor to maintain and continue during their absence the present relation of confidence existing between them and their patients and will on their return, by publication in some newspaper generally read in the territory of their practice, announce their return and ask that their former patients again employ them as previous to the military interruption of their practice;

Resolved, That upon their resumption of their respective practices we will return to them all appointments held by them at the time of their enrollment in the country's service, and be it further

Resolved, That a copy of these resolutions be sent to each of the local papers and the State Journal for publication.

C. A. JENSON, Secretary.

Since the last report Lieut. Lewis has been transferred from Fort Riley to Fort Lewis. Lieut. Merrill is doing X-ray work in Los Angeles. Lieut. Gardner is at Fort Mason. Drs. Avery and Homer have received their commissions and are awaiting orders.

Dr. R. W. Avery has received commission as first lieutenant in the Reserve Officers' Medical Corps. He is the first Oxnard man to receive a commission. Dr. Avery has almost closed the details of his practice here so as to be ready to answer the call to service with the least possible delay.



## Military News

The Army Medical Department has been charged by the Secretary of War with the duty of supplying gas masks and other appliances to protect United States troops against asphyxiating and poisonous gases used in warfare, and to that end is organizing a Gas Defense Service, including the necessary overseas repair sections for work abroad.

### NAMED TO WOMAN'S COMMITTEE.

The woman's committee of the Council of National Defense announces that Miss Hannah Patterson of Pennsylvania has been appointed by the council as a member of the woman's committee. Miss Patterson will remain permanently at headquarters, 1814 N Street NW., Washington, D. C., with the title of resident director. She will give counsel and assistance whenever it is desired by the various state divisions of the committee.

### MEDICAL OFFICERS TRANSFERRED.

The following-named officers of the Medical Reserve Corps are relieved from duty at the places specified and will proceed to the camps mentioned opposite their names, and report in person to the commanding general thereof and to the commanding officer of the base hospital for duty in the cantonment laboratory:

Capt. Robert L. Tebbitt, Fort D. A. Russell, Wyo.; Camp Kearny, Linda Vista, Cal.  
First Lieut. John M. Rehfish, San Francisco, Cal.; Camp Kearny, Linda Vista, Cal.

### WOMEN PHYSICIANS PREPARE FOR SERVICE.

San Francisco women physicians, who make up the majority of the membership of the California Organization of Women Physicians for Federal Recognition, are beginning to prepare themselves for service abroad. French classes are held from 10:30 to 11:30 A. M. The beginners' class meets in Dr. Millicent Cosgrave's office, 350 Post street, with Miss Quayle in charge. The advanced class meets in Dr. Adelaide Brown's office, with Mrs. Louise N. Howard in charge. Classes are held once a week.

### BOARD NAMED TO COLLECT DATA FOR MEDICAL HISTORY OF WAR.

The Surgeon General of the Army has established a board to collect material for the medical and surgical history of American participation in the European War. This board is composed of Col. C. C. McCulloch, librarian of the Army Medical Library; Maj. F. H. Garrison, assistant librarian in direct charge of work on the history; and Capt. John S. Fulton, secretary of the Maryland State Board of Health, who will have charge of the statistical work. Some European countries are known to be well along on medical histories of the war. The medical history of the Civil War in the United States is made up of six volumes, whose preparation covered a period of 28 years from the end of the war. It is planned to have the work done relatively soon after the end of the war, although the immense mass of reports to be gone through and analyzed, and the material from them assembled, will probably require many months' work.

### SIZE OF ARMY MEDICAL SERVICE.

The Medical Department of the Army now has an enlisted personnel of over 69,000 men, compared with 6,600 just before the outbreak of the war. Nearly 13,000 officers had accepted commissions in the Medical Reserve Corps up to October 1; the Dental Reserve Corps now has over 2,600

commissioned officers and the Sanitary Corps about 240.

In organizing for war work the Surgeon General's office has added sections on internal medicine; medical officers' training camps; medical military instruction; psychology; neurology and psychiatry; surgery; infectious diseases and laboratories; head, eye, ear, mouth and brain; military orthopedics; special hospitals and physical reconstruction; gas defense; food; office development and filing system.

The Surgeon General's office now has over 500 clerks and messengers and more than 100 officers, compared with 140 clerks and messengers and 10 officers which made up its personnel in March, 1917. On October 1 the Regular Nurse Corps numbered over 300 members, with about 1,600 members in the Reserve Nurse Corps, as compared with 230 in the regular corps and 227 in the reserve corps in March, 1917.

### RED CROSS NURSES IN SERVICE NOW NUMBER ABOVE 2,000.

More than 2,000 Red Cross nurses are now engaged in active nursing service and another 2,000 in teaching and committee work, the national committee on nursing of the American Red Cross announces. Nine thousand more stand ready to serve at once, and the number of trained nurses volunteering for service with the Red Cross now averages a thousand a month.

Miss Jane A. Delano, chairman of the nursing committee, states that the general scheme of unit organization was to keep together groups of nurses and doctors with experience in the same training schools and hospitals. Base hospital units for the Army and the Navy have been recruited from alumnae of the schools connected with the largest hospitals in the country in groups of 20, 40, 65 and 100. Besides the base hospital units the Red Cross has established units of nurses for emergency use. Such a hospital unit consists of one doctor and twenty-five nurses. Specially trained nurses are being held in readiness for work in units devoted to pediatrics, orthopedics, mental diseases, and public health.

Infant welfare nurses have already been sent to France and to Roumania. Plans are also under way for a special unit of nurses trained in the care of mental diseases to serve in the mental wards of the hospitals established at the thirty-two Army cantonments. Units in orthopedics are being prepared to meet the needs of the maimed in the reconstruction hospitals.

In the civil zones surrounding the training camps and cantonments and the naval base, fifty public health nurses have been assigned to work under the Red Cross sanitary directors. Ninety-five Red Cross nurses in the town and country nursing service are engaged in teaching and nursing in rural and mining districts that the public health at home shall not suffer needlessly.

### INFORMATION ON REHABILITATION OF INJURED.

The Surgeon-General's office has addressed a letter to the secretaries of all county medical societies relative to the rehabilitation of partially handicapped persons who have been successful following injury. Arrangements are being made for special treatment for the wounded, including special efforts for functional restoration of damaged parts and vocational re-education for those who, from the nature of their illness or injury, are unable to follow their previous occupation.

To aid in this work the Surgeon-General desires to know what those are now doing who are suffering from chronic illnesses or who are partially disabled as a result of injuries. For exam-

ple, a person who has lost the right hand may still be a successful carpenter or market gardener; one having lost both lower extremities may be successful in some line in which he is not required to move from place to place; a man with chronic heart disease may be suitably occupied in work in which there is no special stress on that organ. The collection of this experience should be of assistance as showing what the various types can do.

The Surgeon-General requests that medical societies and physicians aid in this work by securing a list of partially disabled persons in the county who are successfully following trades or occupations. The information desired in reference to each case should include: (a) character of disability, medical or surgical; (b) the work at which the patient is employed, and degree of success; (c) the way in which he learned or entered his occupation after his injury or illness. The names of the disabled are not necessary.

If any man who has been successful after an injury or illness desires to write a short autobiography stating his experience, this will be very useful and will be utilized in preparing a booklet to be distributed to the men at the proper time.

### Notice

#### ASSISTANT SURGEONS IN PUBLIC HEALTH SERVICE.

Examinations for positions as Assistant Surgeons in the U. S. Public Health Service will be held at the U. S. Marine Hospital, San Francisco, every few months. After four years' service, Assistant Surgeons are entitled to examination for promotion to the grade of Passed Assistant Surgeon. Passed Assistant Surgeons after twelve years' service are entitled to examination for promotion to the grade of Surgeon. Assistant Surgeons receive \$2000, Passed Assistant Surgeons \$2400, Surgeons \$3000, Senior Surgeons \$3500, and Assistant Surgeon-Generals \$4000 a year. When quarters are not provided, commutation at the rate of \$30, \$40 and \$50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. Candidates must be between 23 and 32 years of age, graduates of a reputable medical college and have had one year's hospital experience or two years in general practice. The examinations will be physical, academic, professional and clinical.

Invitation to appear before the examining board may be obtained by applying to the Surgeon-General, U. S. Public Health Service, Washington, D. C., enclosing two testimonials as to professional and moral character, one of which must be signed by a physician. Further information may be obtained from the Medical Officer in Charge, U. S. Marine Hospital, Thirteenth avenue and Lake streets, San Francisco, Calif.

### Correspondence

To the Editor:—I am reporting to you the following case which may be of interest: Last night an Indian about sixty years of age, called desiring relief as he had not made water for twenty-four hours and had just walked into town from a ranch three miles in the country. He stated he thought he would die on the road as he was in so much misery. His abdomen was enormously distended.

I catheterized him with a small soft rubber catheter and withdrew 2000 c. c. of perfectly clear urine. He stated he had been drinking water-

melon seed tea all day in the hope of starting the flow but without effect. Its diuretic properties, however, only added to his misery. The immensely large quantity of urine in the bladder was interesting.

Yours very truly,

W. C. SHIPLEY.

October 15, 1917.

From the Doctor in Charge, Military Hospital, Endell Street, W. C. 2, London, England.

To Dr. L. B. Deal, M. D., 69 Fair Oaks Street, San Francisco.

Sep. 11th, 1917.

Dear Madam:

In reply to your letter to Dr. Garrett Anderson I have pleasure in giving you the following facts about the employment of women doctors by the War Office:

The medical staff of this hospital is appointed by the War Office, and has entire charge and control of the hospital. The staff is graded and paid according to rank, namely, as Major, Captain or Lieutenant. None of us are commissioned, as a commission cannot be held by women under the present Army Act of Great Britain, and as women cannot be attested or sworn in under that Act.

We are given the position of officers with the pay and allowances of R. A. M. C. officers. In other military hospitals many women are employed. Some of these are graded and paid according to rank as we are here. Others are engaged as civilian practitioners at a flat rate of 24/- a day without uniform or other allowances. It should be noted that there are men doctors in military hospitals engaged on these terms also. Men so engaged are ineligible for general military service, and the War Office has a habit of regarding women as also ineligible for general service.

Our staff here has certain privileges. It is permanent and cannot be moved about by the War Office, and each member except Dr. Garrett Anderson and myself has an opportunity of terminating her appointment every six months.

Yours faithfully,

(Signed) FLORA MURRAY, M. D.,

Doctor in Charge, Military Hospital, Endell St., W. C. 2, London.

To the Editor:

In answer to your request of October 1st for personal impressions of our new experiences as medical officers, I might mention one phase of the work that has struck me as particularly important, and one that has unusual opportunities for close and continual observation. I feel that we are all striving to have our fighting men efficient and in our efforts to get physically fit men we may overlook the fact that they can be mentally unfit for service. In this war, as never before, the intelligence of the individual soldier, or sailor, counts, and it is up to the medical department to recognize the mentally dull—those who would be utterly useless in an emergency. I don't mean to recognize a defective that any one could point out, but to be able to determine with some degree of definiteness the mentality of a recruit.

In the short time I have been stationed at the U. S. Naval Reserve Training Station, San Pedro, California, I have come in contact with several cases that required a special examination with regard to their mental fitness. The first one was a man of 20 years who was always getting into trouble and not doing his duty. Word was passed that he was a little "off," or that he was a "nut." On going over him, using the Stanford revision of the Binet Tests for the measurement of intelligence, I found that he had a fair average adult intelligence. I made a report of the examination with the suggestion that he be given work that he liked better; since that time he has been get-

ting along fairly well assisting the carpenter. On inquiring about him and asking if he was still crazy, I received the response, "Crazy? Sure, crazy like a fox!"

I have gone over other cases that have shown a low mental status. One was a 24-year-old with a mental age of 11 years 6 months. He was enrolled as a hospital apprentice and then had to be transferred to seaman second class, where he got along no better; he was careless in his work and untidy about his person; again he was transferred, this time to the galley. Here he wipes the silver (?), fills the salt shakers, and washes the dish rags; in these duties he shows himself willing and proficient. Another one was 19 years old having a mental age of 12 years and 4 months. He is a walking example of "In-Bad-the-Sailor"; he does better work than the 11-year-old but is careless and untidy. His niche hasn't yet been discovered.

Another case is that of a man of 21 with a mental age of 9 years. He is a borderline case between an imbecile and a moron. He has given a great deal of trouble and will continue to be a burden; he is typical of the type that shows a lack of will to do right more than the will to do wrong. He is always in trouble; he no sooner gets out of a fix than he is in again; he is the butt of his shipmates, being continually teased and tormented. His mentality is so low and of such a nature that he will be recommended to an institution.

One can readily see the effect on the morale and discipline where such men are present. Besides this there is the great danger that might result from giving these men orders of responsibility—danger in the hospital corps, danger in handling a loaded gun, danger in trusting them to do sentry duty; then, too, there is the playful abuse that might be inflicted on the unfortunate himself.

Among the many duties with which a medical officer must acquaint himself that of the mental examination of recruits should receive more specialized attention, for I believe that mental incompetency explains the action of the unsatisfactory recruit in many cases.

R. H. HUNT,

Asst. Surgeon U. S. N. R. F.

U. S. Naval Reserve Training Station, San Pedro, Calif., October 8, 1917.

(Note.—Above report approved by Commandant.)

#### AN OPEN LETTER REPLY.

To the Editor:

The "open letter" contributed by Dr. J. R. Jones to the September Journal starts out with the interrogation, "You ask me why I do not try Christian Science on my paralysis?" Then follows the answer, in part, "I have absolute lack of faith in it."

Naturally the question arises, Does a mental state of absence of faith bear any relation to a bodily condition of dearth of action? If it is true, as is now generally conceded, that the mind, at least in no small degree, controls the body and expresses itself therein, then a static state of thought represented by want of faith may find expression in sluggish or paralyzed bodily members and functions.

Huxley refers to matter as a name for certain forms of consciousness, rather than the hard, indestructible stuff it purports to be; and metaphysicians remind us that the human body is simply a subjective state of the human mind, and hence is active or inactive, normal or abnormal, according to the activity or normality of the mind. Is it not apparent that there may be a very close connection between a mind that will not believe and a body that will not move?

The afflicted man says, in effect, that if he rejects the testimony of the physical senses, "only

emotion is left." He overlooks the faculty of reason, to which most people lay some claim. What part do the senses play in logic, and which one of them declares even so simple a mathematical proposition as that the product of the sum and difference of two quantities equals the difference of their squares?

He says again that if his brain and senses lie, "God is lying." A startling statement, truly, in the face of the indisputable truth that the five senses are false witnesses as to the most elementary facts and are constantly deceiving us except in so far as their testimony is corrected or reversed by education and science. The eye sees the moon resting in the branches of a near-by tree, while science locates it a quarter of million miles distant in the heavens. Such illustrations can be multiplied ad infinitum.

Down in Jersey there is said to be a philosopher who has so much regard for his senses and so little for science that every evening at sundown he sets a bucket full of water on his front gate post, and in the morning triumphantly exclaims, as he finds the water unspilled and undisturbed, I have proved it again, the world does not go round!

Out in the Dakotas, so it is said, resides a prophet who, from lifelong contemplation of the boundless prairies, has reached the conclusion that the world is not round after all, and he has walked all the way from Fargo to El Paso only to find that the earth is flat all the way—another example of the dependability of sense testimony.

Possibly if our afflicted friend had more faith in health than in disease—faith that since health is good it is God-given and that since disease is bad it has no divine authority—he might find that such faith would enlarge into realization and enable him to see with the poet,

"Dreams of sense disappear  
As truth dawns on the sight."

PETER V. ROSS.

(Note.—The above letter was submitted for criticism and reply to a gentleman well qualified to answer it. His reply follows.—Editor.)

To the Editor:

I have read with interest the letter of Dr. J. R. Jones in your September issue setting forth his sufficient reason for not trying Christian Science for paralysis, and I have read, with somewhat different feeling, the reply of Mr. Peter V. Ross, Christian Science Committee on Publication for Northern California.

It should be noted that the committee above named is required to respond to all criticisms of Christian Science that may appear, if necessary at advertising rates, and is responsible for having the papers or journals containing such responses "circulated in large quantities."

Dr. Jones wrote as an individual seeking enlightenment, while Mr. Ross wrote as a committee performing an official duty.

It appears that Dr. Jones finds it difficult to hope to be cured by a system that offers no hope to those who do not believe in it and in which Dr. Jones confesses he cannot believe. In other words, Dr. Jones cannot believe what no sane mind can believe, and despairs of relief from a system that admits its inability to cure the unbeliever.

Let Dr. Jones not be discouraged. If he will strenuously endeavor to relieve himself of the very evident sanity that is his obstacle to belief, and if he succeeds, he will then, in all probability, find it easy to believe the most preposterous absurdities of Christian Science and may then, upon the merest trial of its healing power, satisfy what is left of his mind that his paralysis has been completely cured.

May I take a little of your valuable space briefly



to examine one of the arguments of Christian Science Committee on Publication Ross?

Supporting the Christian Science contention that knowledge derived through the senses is erroneous and that non-sense is the only reliable information, Christian Science Committee on Publication Ross asks what part the senses play in logic, which of them demonstrates the simplest mathematical proposition?

I confess that a wide familiarity with the "logic" of Christian Scientists fails to disclose that sense has any part in it; but let us try to treat the matter seriously.

The mind reasons, and the mind is a conglomerate of states of consciousness. Consciousness is possible only to sentient beings. Were there no sensation, there would be no mind, or it would be an utter blank. A stone is as capable of reasoning, of logical methods of thought, as is the mind of a being that can neither see, hear, feel, taste or smell; and yet Mrs. Eddy herself says, "The five physical senses are the avenues and instruments of error."

What sense would there be in endeavoring to controvert so senseless a proposition? If Dr. Jones is really eager to qualify for belief in Christian Science as a prerequisite to the cure of paralysis, possibly he may facilitate the derationalizing process by engaging in argument with the learned Christian Science Committee on Publication Ross. Only a lunatic can believe the things Christian Scientists pretend to believe, and prolonged argument with a Christian Scientist over Mrs. Eddy's aberrations ought to be a distinct aid to mental disorder.

With delightful, but unconscious, humor the esteemed committee closes his communication with the sublime lines:

"Dreams of sense disappear  
As Truth dawns on the sight."

That is to say, dreams of sense disappear as truth dawns on the sense of sight.

But, enough. Life is too full of opportunities for useful activity to waste time on self-evident absurdities.

The important question is, do Christian Scientists effect cures? Is there any truth in their oft-repeated assertion that they have healed organic disease in its last stage—consumption, cancer, tumor, heart disease, diabetes, Brights disease and all the rest?

I confidently affirm that there is not a word of truth in the professed cures. No such professed cure has ever been established. No such professed cure has ever been submitted to competent judgment in order to determine its reality. No such professed cure ever will be submitted to competent judgment, because it is well known to those making the professions that competent judgment would establish the falsity of the professions.

Christian Science healers are the most incompetent of incompetents; for they not only have made no attempt to render themselves competent to determine the presence or the absence of disease, but they have positively sought to render themselves as incompetent as they possibly can.

Mrs. Eddy taught that education is the cause of all disease; that the less one knows of physical conditions, the facts of physiology, the laws of health, the more power one has to heal disease. She taught that knowledge of any of the sciences is an obstacle to spiritual discernment; that the less thought given to sanitary subjects the less disease there will be. So that the Christian Science healer, in the endeavor to acquire healing power, actually strives for the most complete ignorance regarding everything that would tend in any degree to qualify him intelligently to discuss physical conditions.

If Christian Science Publication Committee Ross insists that there is available the evidence

of persons who will testify to their own cure of organic disease by Christian Science, I will, if he wish, conduct him to the graves of numerous victims of the absurdities and pretensions of this cult, who died of the diseases the alleged cure of which led them into the Christian Science fold.

Has this imposture not gone far enough? Is it not time, in the interest of truth and humanity, for the protection of the weak and credulous, in order that helpless children may be spared needless suffering and unnecessary death through the stupid and cruel withholding of trained medical skill that could in all cases relieve suffering and in countless cases save life—is it not time that Christian Science healers produce proof of their professions, or be suppressed?

A LAYMAN.

## With the Medical Colleges

### OAKLAND COLLEGE OF MEDICINE AND SURGERY.

Five members of the faculty and six of the alumni of the Oakland College of Medicine and Surgery, have entered the government service in the Medical Corps of the Army. The members of the faculty in the service are Drs. A. M. Meads, R. A. Berry, Jau Don Ball, John P. Byrnes, C. A. Wills. The following members of the alumni have entered Government service: Drs. Paul Dolan, Albert B. Herrick, W. P. Milliken, Clyde Shedd, M. J. Wahrhaftig. In addition to these who are serving in the army. Dr. Edward Lundegaard has entered the Navy Medical Corps, and Dr. Don D. Weaver entered the British Medical Service several months ago.

### U. C. COLLEGE OF MEDICINE.

The list of U. C. medical school men who have been called into the service of the Government in the Medical Officers' Reserve Corps has been completed and includes the following:

- H. C. Moffitt, professor of medicine, major.
- E. J. Best, instructor in medicine, first lieutenant.
- F. P. Brendell, intern, U. C. H., first lieutenant.
- H. E. Ruggles, assistant clinical professor of roentgenology, captain.
- W. P. Lucas, professor of medicine, civilian appointment.
- C. L. Trauter, assistant in neurology, first lieutenant.
- J. B. Frankenheimer, instructor in medicine, captain.
- A. Weeks, instructor in surgery, major.
- D. W. Sooy, intern, S. F. H., lieutenant, junior grade, U. S. naval reserve.

### College of Physicians and Surgeons, Medical Department of the University of Southern California, Los Angeles.

Dr. Granville MacGowan has been chosen head of the Genito-Urinary Department.

The Trustees found it necessary to make some changes in the heads of departments for the benefit of the school. Arthur Leon Grover, Ph. B.,

M. S., M. D., who had been for a number of years connected with the Pathological Department of the State University of Iowa, was elected full-time Professor of Pathology, Bacteriology and Clinical Microscopy. Harry W. Coffin, B. S., M. A., who had been connected with the University of Iowa also, was elected full-time Instructor in this department.

Horace L. White, B. S., M. A., Ph. D., who for a number of years was connected with the Chemistry Department of the University of Vermont, was chosen full-time Professor of Biochemistry. Mr. William R. Cleveland, B. S., of the University of Minnesota, was chosen as full-time Instructor in this department.

There are nine full-time teachers in this medical school, who give all of their time to teaching and research. Many radical changes have been made in the past year, regardless of the fact that rigid entrance requirements—which are two years of prescribed university work in addition to four years of prescribed high school work (same as A. M. A. and New York state requirements)—together with war disturbances, decreased the classes materially.

The library has been added to until it now contains practically all of the leading medical books and periodicals. Library cases have been added and a thorough library system is in vogue.

The college clinic has been moved out of the college building into adjoining buildings rebuilt especially for this clinic, and the space formerly occupied by the clinic has been given over to teaching laboratories and research laboratories. With these changes teaching facilities are practically complete.

Beginning with the session of 1918-19 this school requires one full year of internship, or its equivalent, of all graduates.

#### STANFORD UNIVERSITY MEDICAL SCHOOL.

A Red Cross Naval Base Hospital Unit has been established in connection with the Stanford Medical school and the following members of the staff and forty nurses from Lane Hospital (the University Hospital) have been enrolled in the Unit:

Dr. Stanley Stillman, Professor of Surgery (Director of the Unit).

Dr. Albion W. Hewlett, Professor of Medicine.

Dr. George D. Barnett, Instructor in Medicine.

Dr. Edmund Butler, Assistant in Obstetrics and Gynecology.

Dr. John F. Cowan, Assistant Professor of Surgery.

Dr. Harry L. Langnecker, Clinical Instructor in Surgery (Orthopedic).

Dr. Albert B. McKee, Clinical Professor of Surgery (Ophthalmology).

Dr. Walter F. Schaller, Associate Clinical Professor of Medicine (Neurology).

Dr. Roland B. Tupper, Clinical Instructor in Medicine.

Dr. Frederick Wolfsohn, Clinic Dentist.

The following to act as alternates:

Dr. Philip K. Gilman, Assistant Clinical Professor of Surgery.

Dr. Harold P. Hill, Associate Clinical Professor of Medicine.

Dr. Thomas G. Inman, Clinical Instructor in Medicine (Neurology).

Dr. Lester O. Kimberlin, Assistant in Surgery.

Dr. Emmet Rixford, Professor of Surgery.

Miss Elizabeth Hogue, Superintendent of Nurses, Lane Hospital.

There has also been established at the Medical School a Training School for Medical Officers of the United States Navy. One course of six weeks has just been completed and a second group of men have been enrolled for another period of six

weeks. Dr. George Rothganger, Assistant Clinical Professor of Surgery at the Medical School, who is now surgeon in the United States Navy, has charge of this work and is assisted by other members of the staff of the Medical School.

A Hospital Corps Training School for the instruction of fifty hospital apprentices has been conducted at the Medical School since July 16, 1917, under the direction of Dr. Stanley Stillman.

The work consists of lectures, recitations and laboratory work in Anatomy and Physiology; First Aid and Minor Surgery; Materia Medica, Pharmacy and Toxicology; Elementary Hygiene and Sanitation; and Bacteriology; also lectures and practical nursing in the medical and surgical wards, operating room of Lane Hospital, and the Outpatient Clinics. Instruction is given by Drs. George D. Barnett, Roland B. Tupper, J. F. Cowan, Miss Jessie Coon and Mr. S. E. Weinberg. Hospital Corps drill is given by Mr. William Meehan, Chief Pharmacist's Mate, U. S. Navy.

Among other members of the staff who are engaged in the active service of the Army or Navy are the following:

Dr. Leonard W. Ely, Associate Professor of Surgery (Orthopedics), granted leave of absence in order to go to Europe as a member of an Orthopedic Unit under Dr. Brackett of Boston, to study Military Surgery, especially Orthopedic Surgery.

Dr. Julian M. Wolfsohn, Assistant Clinical Professor of Medicine (Neurology), granted leave of absence on account of having been detailed by the United States Government to London to study shell shock.

Dr. Harry R. Oliver, Assistant Clinical Professor of Medicine (Serology), appointed Major in the United States Army Medical Corps, in charge of the laboratories of the Western Division.

Dr. Shadworth O. Beasley, Assistant Clinical Professor of Obstetrics and Gynecology, appointed Major in the United States Army Medical Corps, assigned to active duty with the Engineer Corps.

Dr. Harry L. Langnecker, Clinical Instructor in Surgery (Orthopedics), appointed Assistant Surgeon in the United States Navy, with headquarters at Mare Island.

Dr. Jay Marion Read, Assistant in Medicine in the Stanford service at the San Francisco Hospital, and Dr. John F. Chapman, Senior Interne in Medicine and Pediatrics at Lane Hospital, have joined the Army Medical Corps and been assigned to active duty.

Dr. E. C. Dickson, Assistant Professor of Medicine, has recently received a grant of \$3000 from the State Council of Defense, in order to carry on work in Botulism for the Government.

By action of the Medical Faculty, a course in Military Medicine will be required of medical students in their senior year.

The Lane Medical Lectures, which are held every other year, were delivered this year by Dr. Simon Flexner of the Rockefeller Institute for Medical Research. The subject of the series was: "Physical Basis and Present Status of Specific Serum and Drug Therapy," and five lectures were given at the Medical School on the evenings of October 8, 9, 10, 11 and 12.

The fourth annual session of the Summer Graduate Medical Course was held from July 9 to August 17, 1917, and unusual interest was shown in the courses offered. Twenty-one physicians were enrolled in the various courses, which included the following subjects: Clinical Medicine, Röntgenology, Clinical Surgery, Ophthalmology, Gynecology, Otology and Laryngology.

The Four-Quarter System, which has been adopted both by the University and the Medical School, went into effect on October 1st, and classes will be held throughout the entire year.

The new Stanford University Hospital, erected

at a cost of \$500,000, will be completed and ready for occupancy about November 1st. This hospital was planned as a future surgical unit of the university hospital, but for the present it will be used largely as a general hospital for the accommodation of private cases. The hospital will be open to all reputable physicians of the state.

Every effort has been made by the Board of Trustees and the Clinical Committee to make it an up-to-date plant and provision has been made for offices for consultation with special rooms for eye, ear, nose and throat work. A new X-ray department, a thoroughly equipped plant for hydrotherapy, electrotherapy and mechanotherapy have also been installed in the new hospital.

## State Board of Health

### SEPTEMBER MEETING.

At the regular meeting of the State Board of Health, held in Sacramento on September 1, 1917, the following members were present: Dr. George E. Ebright, president, and Drs. Fred F. Gundrum, Edward F. Glaser, Adelaide Brown, Robert A. Peers and Wilbur A. Sawyer.

The following appointments were made:

Dr. Ethel M. Watters of San Francisco, Sanitarian in the Bureau of Venereal Diseases.

A. M. Bean, Assistant in the Division of Biology in the Bureau of Communicable Diseases.

Miss Marion Lynne of Monrovia, Social Service Director in the Bureau of Venereal Diseases.

Robert G. Wray, Inspector in the Bureau of Foods and Drugs.

Mrs. Mary E. Delport, stenographer in the Bureau of Venereal Diseases.

The action of the secretary in giving temporary employment to Michael Burkel and Earl M. Tennis, bacteriologists, in connection with the co-operation of the board with the Navy in controlling meningitis in the naval camp at San Diego, was confirmed.

Miss Anna C. Jamme, Director of the Bureau of Nurses' Registration, was requested to prepare, in co-operation with the secretary of the board, a set of regulations for the conduct of midwives and to submit them to the board for adoption.

By resolution of the board, the quarantine of the eastern half of Siskiyou County against rabies, instituted on February 23, 1917, was lifted.

The following resolution requiring the reporting of all cases of tuberculosis to the local health officers was adopted:

"Resolved, That the privilege previously extended to physicians of reporting tuberculosis cases direct to the State Board of Health, instead of through the local health officials, is hereby withdrawn, and physicians are instructed to report all cases of tuberculosis to the appropriate local health officer, as in the case of the other communicable diseases which are required by law to be reported, and that health officers are instructed to exert unusual precautions to protect the records of reported cases of tuberculosis from public inspection."

Permission was granted to the Fort Wayne Anti-Tuberculosis Association to reprint the California State Board of Health's Primer on Tuberculosis.

Regulations for the prevention of venereal diseases were read, amended and adopted.

The Bureau of Venereal Diseases was authorized to issue salvarsan, or approved substitute, to accredited public clinics or hospitals for treating syphilis in the infectious stages and to health officers, or their representatives, for the treatment of persons under official isolation for syphilis.

A tentative draft of a proposed San Francisco ordinance for the prevention of venereal diseases, as prepared by a committee of the San Francisco Medical Society, was discussed. The board found that it did not approve of the proposed ordinance in its present form, as it was in conflict with the program of the State Board of Health for the control of venereal diseases.

The following resolution was passed relative to the care of venereal disease cases under official isolation or quarantine:

"Whereas, Counties are the appropriate units for the support of indigent sick and of contagious disease cases; be it

"Resolved, That in the enforcement of venereal disease control measures, said cases, where isolation or quarantine in public hospitals is required, should be cared for by the county hospitals except where otherwise arranged by local health officers."

Temporary permits to operate thirty-one swimming pools were granted on the recommendation of the Bureau of Sanitary Engineering.

A temporary permit was granted to the Petaluma Power and Water Company to supply water for domestic purposes to the city of Petaluma.

The board confirmed the action of the secretary in quarantining the San Lorenzo River at Santa Cruz for a distance of one thousand feet from its mouth, against bathing, because investigation by the Bureau of Sanitary Engineering had found that the lower part of the river was dangerously polluted with sewage.

The board decided that the irrigation of potatoes with sewage would not be permitted.

Four certificates as registered nurses were granted through reciprocity.

Licenses were granted on the recommendation of the Director of the Bureau of Foods and Drugs for the operation of 27 cold storage warehouses.

Cases of alleged violations of the Food and Drug laws were heard and many were referred to district attorneys for prosecution.

### OCTOBER MEETING.

The State Board of Health met in Sacramento on October 6th, 1917. There were present Doctors George E. Ebright, president; Fred F. Gundrum, vice-president; Edward F. Glaser, Robert A. Peers and Wilbur A. Sawyer.

The appointment of Dr. Harry G. Irvine as Director of the Bureau of Venereal Diseases was confirmed. The appointment became effective September 21, 1917.

Amador County was transferred from the Northern State Health District to the Central District,



and Trinity County was transferred from the Northern District to the North Coast District.

Mr. Joseph Doman, Engineering Assistant in the Bureau of Sanitary Engineering, was granted a leave of absence until the expiration of his military service.

Delegates were appointed to represent the Board as follows:

Prof. E. J. Lea, Director of the Bureau of Foods and Drugs, at the meeting of State and Federal Food and Drug Inspectors of the Western District at Salt Lake on October 22nd to 24th.

Mrs. E. L. M. Tate Thompson, Director of the Bureau of Tuberculosis, at the annual meeting of the southwestern conference of tuberculosis at Grand Canyon on October 22nd and 23rd.

Dr. W. A. Sawyer, Secretary of the Board, at the annual meeting of the American Public Health Association at Washington, D. C., on October 17th to 20th.

Rules were adopted governing access to the records of the State Bureau of Vital Statistics and those in the offices of local registrars. One of the rules provided that any person, in order to obtain permission to inspect the records of the local registrar, must make written application stating the information he desires to obtain. Local Registrars are given the right to refuse the permission to search records if the object is not a proper one.

Permits were granted on the recommendation of the Director of the Bureau of Sanitary Engineering for the operation of 112 swimming pools.

Temporary permit was granted to the City of Vallejo to supply water from impounded reservoirs in the Wild and Green Horse Valleys. Temporary sewage disposal permit was granted to the Alameda County Tuberculosis Hospital. A permit was granted to the City of Anaheim to extend its Imhoff tank installation for its sewage treatment.

On the recommendation of the Director of the Bureau of Registration of Nurses the nurses' training school in connection with the Vallejo General Hospital, having been inspected and found not to meet the requirements of the Board, was not placed on the accredited list of nurses' training schools. The nurses' training school in connection with the Fairmont Hospital, San Francisco, was placed upon the accredited list for one year.

The Board made a ruling relative to graduates of accredited schools in other states where additional study is required after graduation for eligibility for registration as nurses. Included in the ruling was the requirement that where additional study is taken in California it must be pursued as undergraduate work and under the same regulations as pertain to the regular students of the training school.

Certificates as registered nurses were granted to 142 nurses who had passed the examination for registration held on August 22nd and 23rd, 1917. Three nurses were given certificates through reciprocity.

A large number of food and drug cases were taken up and hearings were held. The majority of the cases were referred to the District Attorneys for prosecution.

W. A. SAWYER, Secretary.

### Quack Chamley Again Active

The State Board of Medical Examiners of California has been constantly active in an endeavor to suppress the operations of the above mentioned individual, who has been actively engaged in this state for several years. The records of proceedings before the Board for revocation of certificate, compiled since the present Board became operative, shows on page 47 in the matter of "proceedings to revoke the certificate of Samuel R. Chamley, issued February 9, 1889, under sub-

division 3rd of section 14, chapter 354 of Statutes of 1913, as amended by chapter 105, Statutes of 1915," Nov. 4, 1915, complaint filed; Nov. 4, 1915, citation issued; Dec. 4, 1915, answer and demurrer filed; Dec. 15, 1915, respondent appeared with attorney and moved for continuance by reason of the absence by sickness of the attorney for Dr. Chamley, who had been handling the proceedings. Motion for continuance was denied. The demurrer interposed by respondent was overruled, the Board determining that the complaint sufficiently alleged an offense in compliance with the section of the Medical Act. Attorney Lecompte Davis appeared with Attorney John S. Cooper as counsel for respondent Chamley. The following witnesses testified and the matter was submitted: Mrs. M. E. Del Valle, Grace E. Allen, Dr. Walter Brem, Walter A. Beswicke, Dr. Harry Oscar White, Dr. Orville Witherbee. The Board determined that the evidence introduced was sufficient to sustain the allegations of the complaint and the respondent was guilty of the charge preferred and that the license of Samuel R. Chamley to practice medicine and surgery in the State of California was revoked."

After the action of the Board above noted, a restraining order was issued by Presiding Judge York of the Superior Court of the County of Los Angeles, and on June 27, 1916, Judge Shenk "cleared the way" for the State Board of Medical Examiners to serve on Dr. Samuel R. Chamley the order revoking his license as a physician in his suit against the Board, restraining the latter from proceeding further. At this time the Judge denied the injunction asked for by Dr. Chamley prior to the last mentioned date. The attorneys for Dr. Chamley on March 13, 1917, petitioned the court for a "writ of review."

Under date of September 30, 1915, the San Francisco Call printed an article opening as follows: "Following his indictment by the grand jury on the charge of obtaining money under false pretenses from Mrs. D. G. Hill of San Diego, detectives are hunting for Dr. Samuel R. Chamley, self-styled cancer expert." . . . Under date of April 17, 1916, the Los Angeles Express printed an article noting that a "fraud" order had been issued by the Post Office Department against Samuel R. Chamley, alleged quack cancer specialist, who operated in San Francisco and Los Angeles. "The order was issued April 14 and the information was received to-day by Clark E. Webster, Post Office Inspector, Webster making a report to the department shortly before Christmas telling of the results of his investigations here. Post Office Inspectors at San Francisco at the same time were making an investigation there. The purpose of the order is to prevent the man from getting any mail at all. It will have the effect, in the opinion of the Post Office Inspectors, of putting him out of business."

Under date of August 24, 1916, the Los Angeles Times printed an article noting that "Mrs. Clara E. C., wife of Dr. Samuel R. Chamley, was prepared to open her fight for separation along another line." . . . During the trial Dr. Chamley testified that several years ago his "income amounted to \$20,000 a year but since the Post Office Department has issued a certain order, and through the action by the State Medical Board, he had lost all his practice with the result his income had fallen off to nothing. . . ."

In the May, 1917, issue of "Brain and Brawn," published in Los Angeles, appears the following article: "Samuel R. Chamley, author of the cruel and false statement that 'every lump in a woman's breast is cancer,' was convicted of practicing medicine without a license, fined \$100 and ordered imprisoned 100 days in the Los Angeles County Jail; the jail sentence was remitted on his promise never again to practice in California."

In the Long Beach Telegraph of May 13, 1913,

appeared an article advising that "Etta V. Niebel was awarded judgment for the full amount of her claim by Judge York yesterday. The trial of this suit to recover \$800 and interest from March 31, 1899, developed the fact that Mrs. Niebel raised the money she paid Dr. Chamley by placing a mortgage on her home."

In a communication signed "R. P. Goodwin, Atty. Gen.," addressed to W. W. Kaufman, formerly attorney for the Board of Medical Examiners, appears the following: "The records of this office show that the order of revocation which was issued on March 4, 1910, revoking order No. 2829, dated December 25, 1909, and order No. 2877, dated January 24, 1910, so far as these orders apply to mail and money orders for Dr. S. R. Chamlee, S. R. Chamley, M. D., S. R. Chamley. This action was taken upon the affidavit filed by Dr. Chamley in which he promised to terminate forever the so-called 'home treatment' of cancer and to restrict whatever business he might do in that line in the future to personal treatment. In support of his application for the revocation of the orders, he represented that he was financially ruined and that the return of letters addressed to him personally marked 'fraudulent' was doing him grave injury. His attorneys also assured this office that it could rely upon any promise made by Dr. Chamley in this connection. With reference to the repeated attempts which had been made to evade the 'fraud' orders Dr. Chamley stated that a physician formerly employed by him was responsible for such attempts, but that upon learning of the facts Dr. Chamley had discharged him. In view of this representation and of the fact that the order covered his individual name and prevented the delivery of personal mail, it was deemed proper to withdraw the orders referred to and this was accordingly done. I note your statement that you are informed that Dr. Chamley is pursuing the same course that he did before the 'fraud' orders were entered. If you have any evidence of this fact, this office would be glad to receive it, and take whatever action the facts may warrant. Respectfully yours, R. P. Goodwin, Atty. Gen."

Quack Chamlee has a lurid record also in St. Louis where, according to Dr. G. A. Jordan,<sup>1</sup> he advertised extensively, "claiming to cure cancer without the knife or pain by means of an application made from a South Sea Island plant, a discovery of Dr. Chamlee's."

He was finally put out of business, a laudable procedure, in which the California State Board of Medical Examiners co-operated.

There are appended certain letters which are excellent illustrations of the damnable quackery and mercenary cruelty of Quack Chamlee:

Palo Alto, Calif., Nov. 30, 1913.

Dr. Chamberlain Co.,  
B-436 Valencia Street,  
San F., Cal.

Dear Sirs:

Have noted your ad as regards lump in woman's breast. My wife has had trouble with a lump in her left breast for a long time. She has used salves but they don't do no good. Doctors want to operate but she won't stand for it, and noting your guarantee offer, I wonder if your cure could help her, as I am afraid it was cancer. It seems larger than it was. Please write and let me know.

Yours truly,

B. W.

S. R. CHAMLEY, M. D.,  
Offices, 436 Valencia Street,  
San Francisco, Cal., Dec. 4th, 1913.

Mr. B. W.,  
Palo Alto, Cal.

Dear Sir:

Your letter received and carefully studied. Can-

dor compels me to inform you that any hard lump in a woman's breast is always cancer. From your letter she might be past cure.

We hope it is yet in a perfectly curable stage but it is never far to the deadline in this awful disease. With every day's delay the chance for cure is less. Delay adds to the difficulties of treatment, makes it more expensive and the case more liable to be refused.

If cancer is neglected there surely comes a stage when it is no longer curable. Honesty has compelled us to refuse hundreds who had waited too long, all of whom could have been cured had they come in time, but they were self-deluded or badly advised and lost their lives by waiting until the disease was too deeply rooted to cure and we were forced to refuse them.

I dislike to alarm you but cancer will not permit of much trifling or delay. Quick and decided action is required to save life. He who seems harsh in warning of danger is often a true friend.

To be cured in that stage you must come and stay here just two weeks. Cure is certain and permanent if treated before the deep glands in the arm-pit are poisoned, then cure is often impossible and death certain and soon.

Our price is always reasonable but varies according to size and number of cancers. We cannot set a definite price without examination; that would be only guessing. You can put the price in any bank here until satisfied of a cure.

Room, board and poulticing (if needed), \$1.50 per day extra.

Please get what money you can and make arrangements to get more if needed and come at once as delay in this case is very dangerous.

Yours sincerely,

S. R. CHAMLEY, M. D.

Dictated by Dr. S.R.C.

#### CANCERS AND TUMORS CURED

Without Knife or Pain, or Pay until Cured.

Absolute Guarantee.

S. R. CHAMLEY, M. D.,

Offices 436 Valencia St.

San Francisco, Cal., Jan. 19, 1914.

Mr. B. W.,

Palo Alto, Calif.

Dear Sir:

We have been expecting you to come for treatment almost any day, and we have become anxious about your waiting so long. You are, for some reason which we do not understand, neglecting yourself.

Considering all the testimonials we have given you, and also the full and complete explanation we have made for your benefit, you ought not to have any doubt about our ability to cure cancer.

Could you but see the number of cancer sufferers we must refuse almost daily because they delayed until their cases became hopeless; could you but see them go away in utter despair to die in a short time, and then could you realize that your case will be like theirs in the near future unless properly treated, you would not wait another day.

It must be that you do not realize the awful danger from cancer. You may think your trouble does not amount to much, as it does not pain or inconvenience you. Let me tell you, friend, that all such things prove fatal if left alone or if not properly treated. None pain until almost past cure.

Surely you are not willing to allow yourself to die of such a terrible disease as cancer. Therefore, we give you this one more warning. If it is not heeded we will feel that we have at least done our duty.

Hoping that you will realize the dangerous condition you are in, the duty you owe to yourself and to your friends, and that you will grant us

<sup>1</sup> 11 Am. Jour. Pub. Health, 1917, VII, 727.

the opportunity to give you a new lease of life and answer this at once, we beg to remain,

Yours very sincerely,

S. R. CHAMLEY, M. D.

Dictated by Dr. S.R.C.

(Note:—Same heading, i. e. Dr. C.'s letter head.)  
San Francisco, Cal., Jan. 10, 1914.

Mr. B. W.,  
Palo Alto, Cal.

Dear Sir:

(Same letter as that dated Jan. 19, 1914. Must have been a circular letter.)

The following letter was sent to physicians:

(Note:—Same heading as the other, i. e. the Dr.'s letter heads.)

San Francisco, Cal., (dateless).

Dr. E. D. T.,

Dear Dr.:—I take an oath that I have made nearly one-half million dollars with my cancer remedy. I am now an old man (63) and will sell it to you for only \$20.00 and teach you by my book and typewritten correspondence to cure cancers on any part of the face and body. It is a most wonderful, strange but fortunate combination of several medicines easily obtained at any large drug store. I often get \$1000 for curing a cancer and \$300 to \$500 is very common.

I firmly believe that I have cured more cancers than any other Doctor living. I have been curing cancer over 46 years, beginning at Troy, Illinois, and I cannot work at it many years longer and want to give it to the world, but it requires some teaching on a few specially hard and uncommon cases, besides the cost of my book of instructions, formulas and directions for curing. I take an oath that I believe it is the best treatment on earth to-day for cancer in all its many forms. I assure you it is no fraud, else I could not have made so much money. Many physicians have told me that I should teach just as many other physicians in separate communities as possible. You can make thousands of dollars with it and I will teach you how and give you all the formulas and all the secrets that I have worked out in my 40 years curing cancers. It will kill and cure cancer in the mouth without any danger whatever.

I have had large offices in St. Louis, Chicago, Los Angeles and here in San Francisco in the last 25 years, three of them running all at once. I have thousands of excellent cures all over the United States. If you buy my remedy and cure one person, then tell a few you have discovered a new cure for cancer, everybody will soon know it and talk about it, newspapers will mention it and you can soon get many new cases.

Now, if you think you might buy this wonderful treatment complete in all its details, send 24 cents in stamps or a 25-cent piece in a letter for my 120-page book of testimonials of many of the most wonderful cures of cancers the world has ever known.

Price only \$20.00 for a treatment that I have been making from 20,000 to 30,000 dollars with every year for many years. Do not neglect to buy this while I am able to teach you by answering all inquiries about any hard cases, or I will give you half the money from any bad cases you send me. I have just taken two \$2000 cases and a \$1000 case, \$3473 of it in advance.

Yours for the good of humanity,

S. R. CHAMLEY, M. D.

In the Journal of the A. M. A. recently<sup>2</sup> is copied a circular letter by Quack Chamlee, addressed to homeopaths and eclectics. The first four paragraphs are given as follows:<sup>3</sup>

"S. R. Chamley—sometimes he spells his name

'Chamlee'—is a resident of Los Angeles. Chamley is the 'cancer cure' quack who frightens impressionable women into the belief that 'any lump in a woman's breast is cancer.' He has been swindling the sick for years. In December, 1909, while living at St. Louis, but also operating from Los Angeles, a fraud-order was issued against him under his various names applying both to his St. Louis and to his Los Angeles offices. Then Chamley changed the name of his concern to 'St. Louis Sanitarium,' using a postoffice box; in January, 1910, the fraud-order was extended to cover this new name. Chamley transferred his swindle to Oakland, Calif., and some weeks later the fraud-order was still further extended to cover the Oakland address. He opened offices in St. Louis and Los Angeles under still another name, the 'United Specialists Cancer Cure Company,' and the federal authorities in February, 1910, denied these the use of the mails."

"In March, 1910, the fraud-orders were revoked in so far as they affected Chamley's personal names, the quack having agreed to go out of the 'cancer cure' business and having filed an affidavit to this effect with the federal authorities. His oath, as might have been expected, was as worthless as his business is villainous. The Journal in August, 1915, called attention to the fact that Chamley was sending out letters to physicians offering to sell for \$20 full instructions that would enable physicians to carry out the same cruel swindles that he himself had waxed rich on. Also he was boldly advertising his fraudulent cancer cure in over a hundred newspapers. About the same time Chamley was indicted by a grand jury at San Francisco for obtaining property under false pretenses. From the newspaper reports it seems that he frightened a woman into believing she had cancer and then obtained a promissory note for \$2000 for an 'operation' which he persuaded the woman he would have to perform. After the victim had paid \$1500 on the note, the quack, it appears, told her that she must be operated upon again and he demanded more money. Two women who acted as nurses for Chamley are said to have testified before the grand jury that Chamley admitted that he knew the woman had no cancer but that he meant to get all the money he could.

"The federal officials again took action and still another fraud-order was issued against Chamley. At that time Judge W. H. Lamar, solicitor for the Post Office Department, in his memorandum to the Postmaster-General, scathingly summarized the case against Chamley thus:

"It may be said that the business of Dr. Chamley, contemplating as it does the extortion of money for a worthless and often harmful 'treatment' through a deliberate propaganda of terror among impressionable women by means of the cancer advertisements and other literature referred to above, is one of the most vicious which has ever been before this office, and constitutes a more sinister parasite on the community than the dread disease which Dr. Chamley offers to cure."

At present Quack Chamley is seeking doctors through whom he can operate as he is not allowed to solicit or treat patients under his own name. While no decent physician will be tempted by the opportunity to learn this "cure," still it serves to show that Quack Chamley is bound by no slightest consideration of honor or decency.

Quack Chamley is still doing business and the united decent sentiment, both medical and non-professional, is none too strong to oust him. The State Board of Medical Examiners has a nearly hopeless fight on hand so long as such quacks can find advertising media and are allowed the use of the mails. Nevertheless means must be found to eradicate Quack Chamley permanently.

<sup>2</sup> 1917, LXIX, 749.

<sup>3</sup> See A. M. A. Sept. 1, 1917, p. 749.



## Department of Pharmacy and Chemistry

Edited by FRED I. LACKENBACH.

### LITTLE PURE ZINC OXIDE ON THE MARKET.

Examinations made by the Bureau of Chemistry of the United States Department of Agriculture show that very little zinc oxide on the market in the United States complies with the standards of the U. S. Pharmacopoeia. Nearly all of the samples examined contained an excessive amount of lead. The samples were labeled "Not U. S. P.—Containing Small Quantities of Lead," and therefore complied with the Food and Drug Act. The labels on the packages in most instances will probably come to the attention of the druggists, but not to the attention of physicians. The medical profession will therefore not be advised as to whether or not zinc oxide preparations are made from standard ingredients. Conditions may arise where a zinc oxide preparation contaminated with lead may do injury. A limited supply of U. S. P. zinc oxide is available and physicians may protect themselves and their patients from possible injury by calling for such material on their prescriptions.

### New Members

Alter, S. M., Los Angeles.  
Bailey, Ellsworth, Berkeley.  
Chapline, F. L., Orange.  
Clark, D. A. Moorpark.  
Cocke, John V., Los Angeles.  
Cope, J. Hal, Pleasanton.  
Curtiss, W. H., San Diego.  
d'Azevedo, Joseph L., Oakland.  
Dietrich, Henry, Los Angeles.  
Early, C. E., Los Angeles.  
Evans, Chesley L., Los Angeles.  
Fibush, Arthur, Oakland.  
Gates, M. G., Los Angeles.  
Granger, Arthur, Los Angeles.  
Hodson, Wm. H., Los Angeles.  
Jones, E. F., Oakland.  
Josephs, Louis, Los Angeles.  
Kalionzes, Constantine R., Los Angeles.  
Kearney, Elizabeth F., Los Angeles.  
Kelley, J. W., Los Angeles.  
Lamoree, Edith A., Ventura.  
Luckie, J. B., Pasadena.  
Macdonald, G. C., San Francisco.  
MacLean, F. Gordon, Oakland.  
McKenna, W. J., Los Angeles.  
Nutting, J. Floyd, Los Angeles.  
Phelan, C. A., San Francisco.  
Pinkham, Chas. B., San Francisco.  
Reeves, J. Walter, Los Angeles.  
Saeger, B. L., Ojai.  
Scatena, F. N., Sacramento.  
Shaffer, Chas. P., San Dimas.  
Skinner, Cynthia A., Los Angeles.  
Smalley, C. A., Los Angeles.  
Smith, Bernard, Los Angeles.  
Toland, C. G., Los Angeles.  
Wythe, Stephen, Oakland.

### Transferred

Shrodes, Geo. H., Porterville, from Kern County to Tulare County.

### Obituary

Colliver, John Adams, M. D., Los Angeles, Calif.; University of California, San Francisco, 1899; aged 45; a Fellow of the American Medical Association;

instructor in pediatrics in his alma mater; a well known specialist in diseases of children; died in the Angelus Hospital, Los Angeles, August 22, from pneumonia following a surgical operation.

Cornwall, Frank, of San Francisco, died in Sonoma, Cal., on August 30th.

Downie, Cullen L., of Carpinteria, aged 71 years, died December 18, 1916, after a long illness. He was a graduate of the Med. Dept. Univ. of Michigan, '71; and Univ. of Calif., '93.

Follansbee, Elizabeth A., M. D., Los Angeles, Calif.; Women's Medical College of Pennsylvania, Philadelphia, 1877; aged 77; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; for twenty-five years professor, and thereafter emeritus professor of diseases of children in the University of Southern California, Los Angeles; said to have been the first woman to practice medicine in southern California; one of the founders of the Hospital for Children, and Training School for Nurses, in San Francisco; died in the psychopathic ward of the Los Angeles County Hospital, August 22.

Grubb, T. Elmer, of Los Angeles, 29 years old, died at his home on August 24, 1917. He had practiced in Los Angeles since graduating from the University of California in 1912, and is survived by a wife and two children.

Kergan, John A., died in San Francisco, on September 25, 1917, of lobar pneumonia.

Knight, Dr. Cameron, of San Francisco, Cal.; California Med. Coll., '92; died at the Old People's Home in San Francisco, on August 28, 1917, aged 86 years.

Lang, James, M. D., Pasadena, Calif.; Bellevue Hospital Medical College, New York, 1879; aged 86; died at his home, September 7, from senile debility.

Mehlman, Emma, M. D., died at her home in Oakland on September 19, 1917; cause of death, acute leukemia. Dr. Mehlman's death is most untimely as she had just completed her studies and had passed the Board and received her license to practice medicine.

Nutting, Charles W., M. D., Etna Mills, Calif.; Atlanta (Ga.) Medical College, 1876; aged 65; a Fellow of the American Medical Association, and past grand master of the F. and A. M. of California; for two years demonstrator of anatomy in his alma mater; died at his home, September 20.

Paton, Charles James, M. D., San Francisco; University of California, San Francisco, 1883; surgeon for many years in the service of the Pacific Mail Steamship Company, and surgeon on the steamer "Peru"; is reported to have died at sea, August 22.

Pyburn, George, M. D., Sacramento, Cal.; Cleveland Univ. of Med. and Surg., Cleveland, Ohio, '59; aged 86; died at his home, July 20th.

Quigley, Dr. John M., of San Francisco, died at St. Mary's Hospital on September 12th, from injuries received when his automobile capsized in Golden Gate Park. He had practiced in San Francisco for the past twenty-five years; was a graduate of the Med. Dept. Willamette Univ., Ore., and of the University of California, '95.

Thompson, Dr. Charles Henry, of Novato; Homo. Med. Coll., Pa., '67; (C) '76; died at his home on August 15th. He practiced in Santa Rosa for years and was a director of the Santa Rosa National and Union Trust Company. He was aged 75 years. Heart trouble was the cause of death.

Weed, Frances Tudor, M. D., Los Angeles; Univ. of Michigan, Ann Arbor, '95; aged 58; formerly deputy health officer of Grand Rapids, Mich.; while crossing a street in Los Angeles, August 3, was crushed between street cars and instantly killed.

Wood, G. N., of Blue Lake, Cal.; Chicago Med. Coll., Ill., '78; (C) '01; has deceased.